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THE POSSIBILITY OF THE EARLY DIAGNOSIS OF LOCOMOTOR ATAXIA BY THE EYE-SYMPTOMS.

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A review of the voluminous literature on the subject of the eye symptoms in tabes will impress one with the overwhelming importance of a careful and thorough inspection of the extrinsic muscles, the pupils and accommodation, and the optic nerve in the diagnosis of that disease. And this is particularly true in its earliest stages. A well marked case in its second or third stage presents no difficulties. The symptoms are of such a pronounced and individual character and so frequently found in association that "he who runs may read." But in that variable and usually extended period before the spinal sclerosis has developed its distinctive features of altered locomotion, incoördination, perverted and increased sensibility and paralysis, when a diagnosis is of greater value to the patient, an investigation of the ocular apparatus will not infrequently furnish reliable data from which positive deductions concerning the distant future can be drawn.

I will take up, in this paper, eye symptoms of the first or pre-ataxic stage only. They include disturbances of,

First.—The Extrinsic Muscles.—Graefe,[1] in speaking of sclerosis of the posterior columns says, "paralysis of the eye-muscles may appear in a very early period of the disease, for we are bound to accept the conclusion that either independently of the disease process in the cord, or in connection with it, patches of degeneration analagous to those in the cord, form in the nerve nucleus or in the encephalic course of the fibres of the nerves supplying the muscles, and the paralysis can no more be attributed to the diseased patches in the cord than can the changes in the optic nerves which are found under similar conditions."

Schmeichler says[2] "the disturbance of the eye muscles in tabes consists in paresis of one or several. It begins, if it develops at all, almost always with the very first symptoms of the tabes, but at times it precedes the latter by many years."

E. Berger[3] says, "in my cases (109) the far greater number of the ocular paralyses was in the stradium preactacticum."

Gowers[4] says "paralysis of the external ocular muscles is also common in tabes and occurs in several forms. 1. Transient weakness lasting a few days or weeks, and then passing away. 2. Permanent paralysis, complete or incomplete, of a single nerve or part of a nerve. Either form may occur at any stage, but the first is more common in the early and the second in the later stages of the disease."

Swansy says[5] "in the premonitory stages of tabes dorsalis ephemeral partial paralyses affecting now one, and again another of the orbital muscles, may sometimes be observed."

Noyes[6] says, "in special cases the paralysis is likely to be incomplete and not to be permanent. No other sign of spinal cord disease may occur for a long time and this symptom, while unsupported by others, will remain of doubtful significance."

R.P.Howard[7] details the history of a case from which I extract the following paragraph: "Patient, an educated man fifty-four years of age, was of studious and very temperate habits, and free from evidences of syphilis, the possibility of which disease he positively denied. He married at thirty-three and was the father of sixteen children, the youngest eight months old. About the beginning of August, 1883, he suffered from severe headache, which he regarded as migraine, having been afflicted with that neurosis in his youth; at the same time he became irascible. Toward the end of the month strabismus, diplopia, and slight ptosis on the left side supervened, but these gradually disappeared in about six weeks. Some five months later deviation of the right eye, with diplopia, set in, and in about two months was followed by ptosis, which like the other symptoms, developed gradually, but unlike them, has proved permanent." Among the reasons for making the diagnosis of tabes, he gives "the early disturbance of the external and internal ocular muscles."

Roberts[8] says, "certain so-called premonitory symptoms are usually observed, which may last for months or years, but these are really the early symptoms of the disease." Among them he mentions slight strabismus or ptosis.

In an article by Dr. J. A. Jeffries[9] are found the following statements: "In tabes, as has long been known, there has been frequently a history of transitory diplopia during the prodromal period." "The origin of these fugacious paralysis is not known, but their significance, when combined with previous syphilitic infection is gravely suggestive of tabes to follow." "An eye paralysis, however simple it may seem, is always a just cause for suspicion of trouble to come, and demands a prompt and thorough examination of the patient."

Alexander,[10] in speaking of paralysis of single branches of the 3d nerve, says, "since the ptosis frequently disappears we must attribute to a transi-

1 Graefe and Saemisch, Bd. vi., p. 69.
2 Arch. of Ophthal., Vol. xii, Nos. 3 and 4, p. 359.
3 Arch. of Ophthal., Vol. xix, No. 4, p. 485.
4 Diseases of the Nervous System, Am. Ed., p. 295.
5 Diseases of the Eye, 3d. Ed. p. 432.
6 Diseases of the Eye, p. 151.
7 Am. Jour. Med. Sci., Nov., 1889.
8 Practice of Medicine, 5th. Ed., p. 939.
9 Boston Med. and Surg. Jour., Oct. 27, 1892.
10 Syphilis and Auge, p. 137.

tory disturbance of circulation, which sometimes precedes by years the development of tabes."

Cornwell[11] states that "in tabes dorsalis the paralysis (of the eye muscles) often precedes the other symptoms some months, and at times, years." Hughlings Jackson found in six out of nineteen cases, diplopia to be the first symptom. . . . . After it has fully developed and remained stationary for a time, it is apt to disappear.

Moore[12] says, "we must not omit the paralysis of the external muscles of the eye, that are so commonly seen in tabes, usually either the abducens or the motor oculi, and rarely the fourth nerve, which gives rise to various symptoms of dizziness, diplopia and strabismus. Graefe has pointed out that tabetic patients show little disposition to fuse the images in binocular vision, and this is taken as a sign of the central origin of the affection. These muscular paralyses *are frequent in the early stages*[13] of the diseases; they are transient often in character, and this fact has not been very readily explained. Ptosis is also present when no other branch of the third nerve is involved."

Dr. Max Karger, of Berlin, in an analysis of 117 cases of locomotor ataxia, "finds at the commencement of the disease . . . . slight and transitory paralysis of eye muscles."[14]

A sufficient number of authorities has been quoted to warrant the statement that ocular paralyses are among the earliest symptoms in the preactactic stage of tabes. The muscles affected are, in the order of their frequency, the external rectus, the levator palpebrarium, and finally other branches of the 3d nerve. Two features characterize early spinal paralysis and help to differentiate it from that and from other affections of the nervous system. 1. Its incompleteness; 2. Its transitoriness.

My first case was sent by Dr. Frank Woodbury, who kindly furnished the following history:

Case 1.—Mr. Blank, 61 years of age, of German parentage. Father died at about 60 years of age with catarrhal jaundice; mother died when he was a child. A sister older than himself died of phthisis; one brother died with pneumonia, the other with hepatic abscess after being afflicted with locomotor ataxia for several years. The patient is of highly nervous temperament and is excessive in his attention to himself and his health. As the result of a naturally good constitution and absence of all excesses, he has enjoyed remarkable immunity from sickness. He had croup as a child and had the other ordinary diseases of childhood; but his adult life has been exceptionally healthy. He has decided fondness for the pleasures of the table and as a result, has symptoms of chronic indigestion, constantly coated tongue, etc., which, however, causes him little annoyance. He has probably had some gastric catarrh for years and also post nasal catarrh, the latter having been cured by treatment. At one time he had middle ear inflammation, which permanently impaired auditory power in the right ear. Even previous to this time he had had tinnitus in this ear, which still persists, although the ears present no evidences of lesion. He has no vertigo; but on account of double vision is referred to Dr. Hansell for examination of the eyes.

Four months ago he noticed double vision. Examination revealed paresis ext. rect. of L., candle light 20′ distance, exactly in front of face appeared double; images fused by prism varying, at different times, from 15° to 30°, base in; pupils contracted, L. more than R. and slightly irregular in outline. No synechiæ. Both contract on accommodation but not to light. Slight cortical capacity L. lens. Fundus of each normal excepting one vein in the left retina slightly tortuous. Nerves healthy in color and outlines distinct. Knee jerks exaggerated. No dizziness or vertigo. Rhombergs symptom absent. No incoördination. No disturbance in sensibility. No pains.

Second—The Pupil.—A consideration of the pupillary symptoms in the earliest stages of tabes involves a study of their size, their inequality, and their reaction to light and to convergence. Normal pupillary movements depend, in the absence of ocular disease, upon the sensitiveness of those fibres in the retina and optic nerve which convey impressions of degree of light; upon a healthy condition of the nuclei of the pupils in the floor of the fourth ventricle and intercommunicating fibres; upon the soundness of the pupillary branch of the 3d nerve, from its nucleus to the iris, and upon the cilio-spinal centre in the region of 1st and 2d dorsal vertebræ and its communications with the cervical cavernous plexus, lenticular ganglion and the long ciliary nerves. Disease, therefore, of any one of these parts will cause abnormal contraction or dilatation, and will destroy reflex, consensual or associated action.

That such interference is found in the preataxic stage of tabes is shown by many authorities, and would probably be mentioned more frequently but that myosis may exist for years without attracting a patient's attention or bringing him to the notice of the neurologist, and no standard of size, under the same condition of light, seems to be accepted. It is, however, safe to assume that a pupil smaller than 2.5 mm. in diameter, in moderate intensity of light, is pathological.

Schmeichler (*loc. cit.*) relates the case of an "intelligent man who related to me that four year ago his attention had been directed to his narrow pupils; that he had followed their progressive narrowing since then before the mirror, and feared very much that he would become blind by their closure."

Berger found that six cases out of a total of 26 with myosis in stad. preatax. In the case of Mr. Blank, myosis is a conspicuous symptom. According to his own statement he has frequently had the size of his pupils brought to his attention during several years. A peculiarity noticed by Schmeichler of the tabetic pupil is the unusual length of time, after the instillation of a drop of atropine solution, before the pupil regains its previous size—from three to four times as long as in average normal eyes. I used one drop of an 8 grain solution of homatropine to dilate Mr. Blank's pupil to facilitate the examination of the fundus, and it was fully seven days before the pupil had returned to its previous size, five days more than is usually required. Again, the dilatation produced by a mydriatic is less in degree, rarely exceeding 4–5 mm. in width—a condition noticed under the homatropine mydriasis in Mr. Blank. A few writers speak of the inequality in the size of the two pupils in the early stages of tabes. Thus Berger says, "There is no marked difference in the relative frequency of inequality of the pupils in the different stages of tabes; it is but slightly more frequent in the initial stages."

Charcot[15] has also called attention to this symptom.

Jessup[16] says "unequal pupils are often found in cases of apoplexy, acute meningitis, chronic and acute alcoholism, general paralysis of the insane, locomotor ataxia."

Case 2.—Mrs. V., Dec., 1889. R. pupil contracted. L. normal,

11 Am. Jour. Med. Sci., April, 1884.
12 Journal of Nervous and Mental Diseases, 1888, p. 237.
13 Italics mine.—H. F. H.
14 Jour. Mental and Nerv. Dis., Vol. xv, 1888.
15 Rec. of Ophthal., Nov. 1887.
16 Oph. Review, July, 1888.

both respond to light and convergence. Dec., 1892. Had an attack of dizziness one month ago. Says she has rheumatic pain in feet. R. pupil contracted and does not respond to light, but contracts with convergence. L. pupil normal in size and reaction. Knee jerk on L. side almost absent. A positive diagnosis cannot be made, but the anisocoria, unilateral Argylle-Robertson pupil, limited color field with no diminution in the field for white, partial loss of knee jerk and fleeting pains in the feet would seem to point to a commencing sclerosis in the posterior columns of the cord. The Argylle-Robertson pupil is a well known symptom of tabes in all three stages. It is most common in the second, but exceeds in frequency even in the first stage, the normal. Good reaction of the pupil was retained until the paralytic stages in 109 cases studied by Berger, in only four. When that stage was reached all pupils were altered in their reactions.

The Argylle-Robertson pupil has been observed in progressive paralysis, in cerebral syphilis, and possibly in disseminated sclerosis but so rarely that its presence alone would almost warrant the assumption of a commencing post-sclerosis.

Third—The optic nerve.—The earliest sign of degenerative changes in the optic nerve is a diminution of the size of the color fields, then a loss of sensibility to green, with a relative decrease in the fields of other colors, a concentric limitation for white, and, finally, total loss of vision. In many cases it is quite impossible to recognize ophthalmoscopic changes until the field for white becomes limited. Hence the perimeter is more important than the ophthalmoscope in the early diagnosis of tabes. Perimetric measurements, to be accurate, must be conducted with great care, and often repeated with the same set of tests and under the same conditions of illumination. It must be remembered, too, that the ability to distinguish and perceive colors varies among different persons, and according to the method of examination. Ophthalmoscopically, the earliest stages of tabes may be suspected by the clear cut nerve with a pronounced excavation and distinctly seen lamina cribosa and irregularly surrounded by pigment, loss of color, particularly on the nasal side, dilatation and tortuosity of one or two veins, perhaps limited to one and usually the lower segment of the retina (Schmeichler) otherwise vessels normal in calibre and unaccompanied by the white lines which indicate a thickening of their walls. Authorities differ as to whether the temporal or nasal half of the disc shows first the discoloration and hence we must conclude that it is sometimes one, sometimes the other, and frequently the color of the entire disc is normal. By far the greater portion of the cases shows the L. optic nerve to be the first implicated. That atrophy of the optic nerve may precede general symptoms of tabes is abundantly proven. In seven of Berger's cases it was the first symptom, spinal symptoms appearing later. He quotes Charcot, Förster, Graves and Michel in relation to the largest interval of time between the commencing "deterioration" of vision and the earliest and most common symptom of spinal irritation—lancinating pains—and states it to be from two to twenty years.

In case 1, left eye, examination on October 5 and 6, showed decided limitation for green. It was not recognized outside of a circle 5° from point of fixation. Two months later, after salivation and iodide of potassium in large doses the field for green became almost normal in extent. Again, a large retinal vein running down and in, was dilated and tortuous. After treatment it became normal in calibre and course.

Case 3.—Mrs. G. In September of 1883, complained that for 18 months she has not been able to see to go about alone at night, excepting in the moonlight, nor could she see to sew on any colored material. V. R., 20-100, L. 20-20. Both discs white. Fields for white limited on nasal side. Color fields not taken. Pupils very small but responsive to light and convergence. In November of the same year commencing tabes diagnosed by Dr. Chas. K. Mills, to whom I took her in consultation. "She now complains of sharp pains in the legs. Rhomberg's symptom." (Extract from my note book). Five years later the disease ended fatally. While an investigation of the signs of spinal disease, had it been made during the 18 months prior to the first visit to me, might have revealed commencing degeneration of the cord, the first and only symptom complained of during that period, was deterioration of vision due to atrophy of the optic nerves, well advanced in the R. A diagnosis of tabes might safely have been made at this period (1883) from the eye symptoms. Myotic pupils, scarcely responsive, white discs and limitation of the fields for white and probably for colors (since she hesitated in matching colors—the only test to which she was subjected).

Pershing, in an instructive article "Pre-ataxic Tabes Dorsalis with Optic Nerve Atrophy"[17] relates two cases, which I quote in part.

Case 1.—C. L., printer, 38 years old. His mother died of "neuralgia of the stomach." One of the mother's sisters was insane, and the patient's only sister is very nervous and excitable. . . . syphilitic history. . . . V. began to fail in the L. in April, 1889, and grew steadily worse until January, 1890, when V in R. also became much impaired, L. seeming to improve. Transient ptosis on the left side was noticed several times. The knee jerks were found absent in November, 1889. Present condition November, 1890. Can barely see a hand close to face. Cannot count fingers. Pupils equal, moderately contracted; light reflex scarcely perceptible; accommodation reflex could not be tested. White atrophy of both optic discs. Knee jerks entirely absent even with Jendrassik's reinforcement. Plantar and crematerie reflexes present; abdominal excessive. Station with eyes closed normal; stands on either foot. Walks backward perfectly well. No ataxia in arms or legs. . . .

Case 2.—E. P., 53, married. Mother died at 76, of softening of the brain. Father, brothers and sisters said to be very nervous. No syphilitic history. . . . Present condition Jan. 15, 1891. V. R. 5-6, L. 5-10. The fields are much contracted, both for white and colors, especially on the nasal side. Both optic papillæ are sharply defined and of a grayish tint. The R. pupil reacts well to light; the L, is contracted, irregular in contour, with light reaction barely perceptible. Both react well on convergence. The knee jerks are present, and are increased by reinforcement. . . . With eyes closed he can stand on either foot and walks well. There is no ataxia of arms or legs. (All other symptoms absent).

In determining the diagnosis, we must remember that the ocular symptoms illustrated by the cases recorded in the literature as well as my own three cases may be the result of other causes than posterior spinal sclerosis. The causes of ocular paralysis are traumatism, orbital disease, pressure upon the nerve in its course by gumma or other tumors, meningitis, dropsy of the third ventricle, nuclear disease, sclerosis of the brain, spinal disease, etc. Myosis may be medicinal (eserine, opium) irritative, in apoplexy, early stage of meningitis, inflammation of the eye, or paralytic, in affections of the lower cervical and upper dorsal spinal nerves, due to traumatism or disease. The Argylle-Robertson pupil is sometimes found in progressive paralysis but in the large proportion of cases it is a symptom of the first and second stages of tabes. Simple primary atrophy of the optic nerves (without signs of neuritis) is more frequently found in tabes than in all other organic nervous affections. To quote from Pershing's article, "Indeed primary bilateral atrophy alone makes the existence of tabes probable. Nettleship found that of 76 cases, 58 certainly and 10 more

[17] Medical News, March 26, 1892.

probably were due to the same causes that give rise to degenerative changes in the spinal cord and brain. Peltesohn found that of 98 cases of spinal or cerebro-spinal atrophy occurring in Hirschberg's clinic, 78 were cases of tabes dorsalis." Among cerebral causes may be mentioned, hydrocephalus, tubercular masses pressing upon the chiasm, softening and sclerosis of brain tissue. V. Graefe attributes 30 per cent. of all optic nerve atrophy to spinal causes—degeneration of the posterior and lateral columns from sclerosis or chronic myetitis, idiopathic or traumatic.

Various and contradicting opinions are offered by investigators as explanatory of the ocular paralyses associated with tabes. We may, however, accept as probably true, that the paralysis of the extrinsic muscles is, when transient, the result of vaso-motor disturbance and when permanent, of peripheral neuritis, and rarely nuclear, excepting in the last stages, that the myosis and Argyll-Robertson pupil are symptoms of disease of the cilio-spinal centre and that the optic nerve atrophy is a true primary degeneration of the nerve in no way different from that of the cord but not dependent upon it.

My conclusions may be thus summarized:[18]

1. That a transient external paralysis, for example, a ptosis or esotropia, in the absence of known cause might be an indication of incipient tabes.

2. The spinal myosis, the reflex to light wanting but to convergence preserved, monocular or binocular would warrant a strong suspicion of incipient tabes.

3. "Idiopathic "optic" nerve atrophy, non-inflammatory, of unequal degree, often precedes by months or years, the appearance of the spinal symptoms of tabes.

4. That pareses of one or two extrinsic muscles, spinal myosis and Argyll-Robertson pupil, and incipient optic nerve atrophy, coexistent in a person of from 30 to 60 years of age, with inherited neurotic tendencies are forerunners in the majority of cases of posterior spinal sclerosis.

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HIP DISEASE.

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The term hip disease is used for any chronic inflammation in the synovial membrane of the hip joint, in the acetabulum, in the head, neck, or great trochanter of the femur, or in the soft parts immediately surrounding these, which, if allowed to progress without treatment, would ultimately present the symptoms of a tubercular arthritis From a clinical standpoint—the standpoint from which this article is written—it does not appear possible to the authors to accurately diagnose the situation of the primary lesion in more than a few cases; nor is it possible to differentiate between a small tubercular focus in the acetabulum and one in the head or neck of the femur, and often it is not possible, for some time, to differentiate between a condition which will ultimately result in the separation of the head of the femur, and one in which will end in the separation of the great trochanter. Further, we are not able to point out the difference between tuberculosis immediately within the capsule and the same state of affairs immediately without that membrane. From a clinical standpoint we can only approximately locate a lesion, which, unrestricted, ultimately involves all or nearly all of the neighboring tissues; which under treatment usually recovers, leaving us still in doubt as to its precise habitat, and which wherever be its origin demands one and the same treatment. This then in a routine way we characterize by the general term, hip disease.

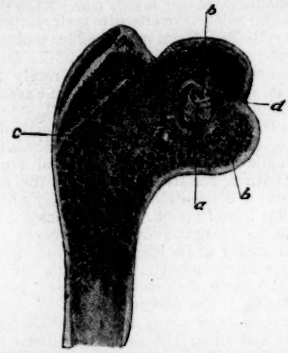

FIG. 1.—Primary tubercular infection in the head of the femur. *a* Cheesey sequestrum; *b*, tubercular infiltration; *d*, pressure groove from resting against the upper rim of the acetabulum, the head being partly displaced from the cotyloid cavity.

Tuberculosis at the hip-joint usually commences as a primary (Fig. 1) or secondary (Fig. 2) osteitis, and more frequently in the femur than in the acetabulum. It may undoubtedly commence as a primary tubercular synovitis, but many cases of synovitis follow from a traumatic rather than from a tubercular origin. Peri-arthritic inflammation seems to derive its origin more frequently from the infectious fevers than from other causes. The favorite habitat of these lesions in the children of syphilitics is in the neighborhood of the epiphyseal line.

FIG. 2.—Secondary tubercular infection; cone-shaped cheesey sequestrum; cartilage lifted up as a vesicle.

However the joint disease may commence, it is at the beginning, or very soon becomes tubercular. In the same way, wherever the lesion may be primarily found, if left untreated it goes progressively on,

[18] If cases 1 and 2 should develop into unmistakable tabes, they will be illustrations of its earliest stages: if not, they must serve simply as examples of the eye symptoms common to that disease, and must be regarded as idiopathic or forerunners of some other central nerve affection than tabes. The conclusions are drawn from case 3, and those recorded in the literature.

extending from part or one tissue to another until all the structures composing the joint become involved (Fig. 3), and the result is a tubercular arthritis. It is, then, with a tubercular arthritis, more or less complete, that we have to deal in discussing the symptoms, prognosis, and treatment of hip disease.

FIG. 3.—Cone-shaped sequestrum abutting against the cartilage, which is perforated with numerous holes and tilted away from the whole head of the bone.

Symptoms.—Almost invariably the first symptom noticed is a slight limp. This usually begins before there has been any complaint of pain, and it remains until a cure has been effected, and not infrequently it persists to the very end of life. In a few cases there may be one or more intervals of intermission during the early months of the disease. The limp is due to the inabilty of the patient to fully extend the thigh on the pelvis more than to any sensitiveness of the joint to weight-bearing; although in untreated cases, and in very many that are subjected to treatment, there comes a time when walking is difficult or impossible from the sensitiveness of the joint and its inability to sustain the weight of the body. Nevertheless the limp characteristic of hip disease is not one of pain; it is rather one of impaired function.

FIG. 5.—Early stage of hip disease. Flexion and abduction—false lengthening.

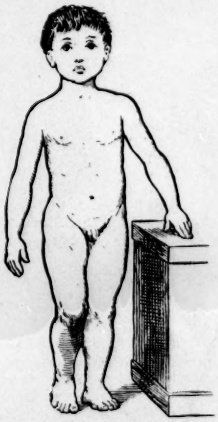

FIG. 4.—Early stage of hip disease. Flexion of right leg without noticeable lateral deformity.

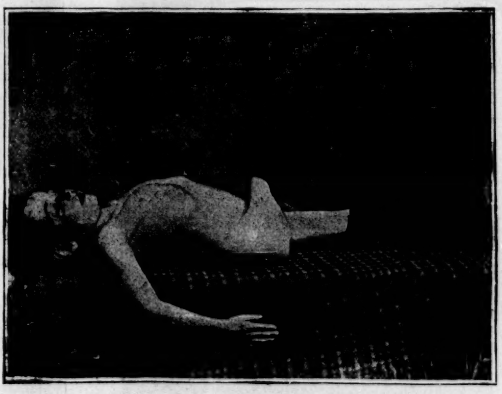

FIG. 6.—Disease of the right hip. Flexion and adduction.

As a rule the patient very early in the disease becomes restless in sleep, and may cry out without fully awakening. The cry is peculiar, and consists in a sudden, sharp, frightened scream, occurring during the first hours of sleep. These night cries commonly precede and almost invariably accompany a period of pain. They have been considered as

characteristic of osteitis, though there can be no doubt of the presence of osteitis in certain cases where no night cries are heard; it is more probable that they are indicative of a rather rapid development of a tubercular abscess under tension. The symptom is valuable, in the early stage of the disease, only as corroborative of other symptoms, and as a hint to the prognosis of abscess.

FIG. 7.—Same case as shown in Fig. 6, with flexion and adduction reduced.

FIG. 8.—Disease at the left hip. Untreated case. Flexion, adduction and outward rotation.

Pain is usually complained of at some time during the course of hip disease, but the fact must not be lost sight of that it is rarely complained of until long after limping has appeared. It disappears months, and often years before the joint is cured, and patients with non-suppurative, and at times with suppurative, hip disease, may never feel the least pain from the commencement of the limping all through the three or four years' course of the disease to a cure, resulting perhaps in a perfectly archylosed joint. When pain is present it is usually complained of at the inner side of the anterior surface of the knee, but it may be felt at any part of the hip or thigh; like the night cries it is a corroborative rather than a diagnostic symptom. It is indicative

FIG. 9.—Disease of left hip. Marked flexion, outward rotation and adduction.

of an osseous lesion, and, coming on or growing worse without assignable cause during the course of treatment, should be considered as pointing to the development of abscess.

FIG. 10.—Same case as Fig. 9. Hip splint on. Deformity reduced.

Inspection of a case of disease stripped for examination, reveals flexion of the thigh upon the pelvis (Fig. 4) with or without accompanying abduction or adduction. Most cases present one or the other lateral deformity, but the rule is not invariable, and some cases run their course and go on to a great degree of flexion without either abduction or adduction.

Abduction when present usually accompanies the early stage of the disease (Fig. 5), and has been looked upon as indicative of effusion within the joint, but of this we do not feel certain. We have observed it late in the disease, and in cases where we have never been able to make out fluctuation. This position of abduction gives a false lengthening to the limb, and is the cause of the obliteration of the buttock fold.

Adduction usually succeeds abduction; and is always present late in the disease unless prevented by the nature of the treatment (Fig. 6). It is usually associated with flexion, although the treatment may have reduced, or prevented, flexion and the adduction

FIG. 12.—Flexing the well limb on the chest develops flexion in the affected member. The patient is unable to put the left limb down upon the table.

may remain. It is usually accompanied with some degree of inward rotation. In old and neglected cases outward rotation may accompany the flexion and adduction (Fig. 8). Outward rotation or eversion of the limb is usually associated with abduction, but the reverse may occur, as already pointed out, and inward rotation with adduction. The cause of these malpositions has not been absolutely determined; but it would seem probable that the position of the tubercular focus together with the assumed attitude of the patient determines the malposition. The patient assumes the attitude of greatest comfort whether lying, sitting or standing, and this strongly influences the deformity in the early stages of the affection. Later the malposition is determined by the unbalanced force existing between the opposing groups of muscles in their effort

FIG. 11.—Testing the movements at the hip joint.

to immobilize the joint, or between the muscular groups on the one hand, and the mechanical device employed in the treatment of the disease on the other hand.

Muscular shrinking, generally believed to be due to reflex influence, comes on early, is very constant, and may be regarded as a very valuable symptom. It has been claimed by careful observers that this muscular atrophy is due solely to disuse, inasmuch as it bears no constant relation to any other factor involved; but we have observed a case in which the limp had been present for only two weeks, and in which there had been no pain and no cessation from usual avocation, and yet in which there was found a circumferential measurement one inch less than that of the opposite thigh, a difference which went on increasing at a less but at an unusually rapid rate during the succeeding fortnight before the application of apparatus. The fact that we did not know the relative sizes of the thighs before the limping commenced renders this case of no absolute value in controversial argument, but we are much inclined to believe that there is present in these cases a shrinking of the muscular masses over and above that due to disuse, or to the constricting effects of the dressings used. Muscular shrinking is so constant a symptom that it may be regarded as of great diagnostic value.

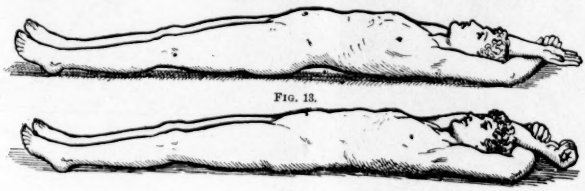

FIG. 13.

FIG. 14.

FIG. 13.—Shows the normal arching of the spine in a healthy person, which can be voluntarily effaced, as shown in Fig. 14.

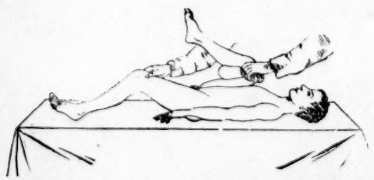

FIG. 15.—Thomas's flexion-test position; elbow hooked through the knee, and forearm carried across the chest. The affected left limb cannot be forced down upon the table.

Shortening may be either actual or practical. Actual shortening is due either to arrested growth, to actual bone destruction, or to partial or complete subluxation. None of these conditions are found early in the disease, but an accurate record should be kept, for in this way the prognosis as to the ultimate length of the limb can best be judged. Practical, or false, shortening is due to adduction or flexion, or both (Fig. 9). It is from the relation of the actual to the practical shortening that we conveniently compute the degree of adduction.

The extent of flexion caused by the deformity may be estimated in the folowing manner: Whilst the patient is on his back, on a table, the surgeon lifts the diseased limb until all lordosis is corrected, and the pelvis is in a normal position. He applies a tape measure along the outer border of the limb in a line with the femur, commencing at the point where it diverges from the table. He measures the length to any point, and the length of a perpendicular from that point down to the table. The decimal fraction obtained by dividing the length of the perpendicular by the length measured along the limb will give what mathematicians call the sine of the angle. By consulting a book of mathematical tables the angle is found. G. L. Kingsley measures a constant length of twenty-four inches along the thigh, and then publishes a table showing the angle corresponding to the length of each perpendicular. For the convenience of readers we append Kingsley's tables.

To measure for abduction and adduction the method of R. W. Lovett, of Boston, is the readiest and best.

KINGSLEY'S TABLE.

In.	Deg.	In.	Deg.	In.	Deg.	In.	Deg.
0.5	1	6.5	16	12.5	31	18.5	50
1.0	2	7.0	17	13.0	33	19.0	52
1.5	3	7.5	19	13.5	34	19.5	54
2.0	4	8.0	20	14.0	36	20.0	56
2.5	6	8.5	21	14.5	37	20.5	58
3.0	7	9.0	22	15.0	39	21.0	60
3.5	9	9.5	24	15.5	40	21.5	63
4.0	10	10.0	25	16.0	42	22.0	67
4.5	11	10.5	27	16.5	43	22.5	70
5.0	12	10.0	28	17.0	45	23.0	75
5.5	14	10.5	29	17.5	47	23.5	80
6.0	15	10.0	30	18.0	48	24.0	90

FIG. 16.—The diagnosis of hip disease in an infant. Disease in left hip. Lack of perfect flexion.

The patient is made to lie straight with the legs parallel. The surgeon now measures for real and for false shortening. Real shortening is found by measuring from the anterior superior spine of the ilium to the inner malleolus on either side and comparing them. False or practical shortening is estimated by comparing the distance between the umbilicus and the inner malleolus on either side. The difference in inches between the real and false shortenings is noted. We then measure the distance between the anterior superior spines of the ilia. Having obtained this information we turn to Lovett's table. If the line which represents the amount of difference in

inches between the real and apparent shortening is followed until it intersects the line which represents the pelvic breadth, the angle of deformity will be found in degrees, where they meet. *If the practical shortening is greater than the real shortening, the diseased leg is adducted; if less than the real shortening, it is abducted.* Take an example: length (from anterior superior spine) of right leg, 23; left leg, 22½; length (from umbilicus) of right leg, 25; left leg, 23; real shortening, ½ an inch; apparent shortening, 2 inches; difference between real and practical shortening, 1½ inches; pelvic measurement, 7 inches. If we follow the line for 1½ inches until it intersects the line for pelvic breadth of 7 inches, and we find 12° to be the angle of deformity. as the practical shortening is greater than the real, it is 12° of adduction of the left leg.

LOVETT'S TABLE.

Difference in Inches between Real and Apparent Shortening.	Distance Between Anterior Superior Spines in Inches.														
	3	3½ 4	4½ 5	5½ 6	6½ 7	7½ 8	8½ 9	9½ 10	10 11	12 13
¼	5°	4°	3°	3°	2°	2°	2°	2°	2°	2°	2°	1°	1°	1°	1°
½	10	8	7	6	5	5	4	4	4	4	4	3	3	3	2
¾	14	12	11	10	8	8	7	7	6	6	5	5	4	4	3
1	19	17	14	13	11	10	9	9	8	7	7	6	6	5	4
1¼	25	21	18	16	14	13	12	11	10	9	9	8	8	7	6
1½	30	25	22	19	17	15	14	13	12	12	11	10	10	9	8
1¾	36	30	26	23	20	18	17	15	14	13	13	12	11	10	10	9	8	8
2	42	35	30	26	23	21	19	18	16	15	15	14	14	13	12	12	10	10	9
2¼	.	40	34	30	26	24	21	20	19	17	16	15	14	14	13	12	11	10
2½	.	.	39	34	29	27	24	22	21	19	18	17	16	15	14	13	12	11
2¾	.	.	.	38	32	29	27	25	23	21	20	19	18	17	16	14	13	12
3	.	.	.	42	35	32	29	27	25	23	22	21	19	18	18	16	14	13
3¼	.	.	.	.	39	36	32	30	27	26	25	22	21	20	19	17	15	14
3½	.	.	.	.	.	40	35	33	30	28	26	24	23	22	21	19	17	16
3¾	.	.	.	.	.	.	38	35	32	30	28	26	25	23	22	20	18	17
4	.	.	.	.	.	.	42	38	35	32	30	28	26	25	23	21	19	18

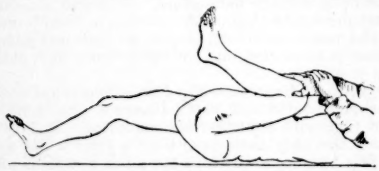

FIG. 17.—Fitting of the pelvis giving false flexion of right thigh.

Actual lengthening of the diseased member rarely occurs, but we have observed it during the course of treatment by the long traction hip-splint. The importance of an accurate record of the angle of flexion and adduction, or abduction, is of the greatest importance. Upon it, and upon it alone at times depends the diagnosis of the disease; and upon it depends the diagnosis of a cure in all cases resulting in anchylosis. A joint in which the angle of deformity is changing is capable under proper treatment of gaining a still greater degree of usefulness. In a case destined to result in anchylosis a cure is not effected until the angle of deformity ceases to change.

The involuntary muscular spasm, which restricts the motion of the joint or absolutely limits it, is the diagnostic symptom of joint disease. It is the first symptom to appear and the last to disappear, and it is the only symptom upon which dependence can always be placed in making the diagnosis. It is believed to be of reflex character and to be due to the irritation of the nerves which supply the joint. It affects only the muscles which control the movements of the diseased joint, but it affects all of them. Upon this depend the diagnosis of the disease and the differential diagnosis from affections which closely simulate the disease. Lack of normal extension and rotation is usually more noticeable in the first weeks of the disease than are restrictions to flexion and to lateral movements; but a careful comparison between the movements possible at the two hip joints will make the defect apparent to one who has become at all familiar with this peculiar symptom. To describe the nature of the spasm is scarcely possible; it is one of those things better learned by touch than by description. In attempting any of the normal passive motions at the joint (Fig. 11) it will be found that in most cases motion is quite free to a certain point; it is there checked, not with the slow elastic resistance of voluntary muscular opposition, nor with the sudden dead stop of fibrous adhesions, but suddenly and positively. Once felt, it is always to be recognized.

Abscesses occur in about half of all the cases in which treatment is not commenced very early. They may be present in any relation to the joint, but the most frequent position for the first abscess to appear is somewhat below and to the inner side of the anterior superior spine of the ilium. The abscess may appear early in the disease or at any time during its course. It is usually ushered in by a period of pain,

FIG. 18.—Hysterical hip, the left.

night cries, and increase of deformity; flexion is always present, and abduction is frequently found in early abscesses, while adduction is more frequently met with later in the disease. During the treatment of the disease any exacerbation of pain or tendency to deformity, unless there has been some well-recognized traumatism, is suggestive of the formation of abscess and warrants that prognosis. The first objective sign is a brawny feeling in front of the joint: this is or soon becomes tender to pressure, ultimately softens in its centre and fluctuation may be made out. The area of fluctuation extends, the extension usually being in the outward and downward direction, and at times fully two-thirds of the upper, outer, and anterior portion of the thigh is occupied with a fluctuating tumor. The abscess may, however, appear posterior to the great trochanter, or it may find its way through the acetabulum, and be made out within the iliac fossa, whence it rises up over the brim of the pelvis, following much the same course as a psoas abscess, and on reaching the thigh occupies its anterior and inner aspect. In some cases it simulates an anal abscess, and after spontaneous opening the

persistence of symptoms suggests a fistula in ano. Much care is required in differentiating it. The course of an abscess left untreated is to spontaneous opening and evacuation. If the abscess opens or is opened early, the pus is thick, yellow, and creamy in character; later on the solid contents separates itself from the fluid, and the abscess cavity is filled with a clear liquor, like whey, in which float large or small curds of fibrin. The abscess opening spontaneously at this time discharges at once the whey-like fluid, and the fibrinous curds come away later according to the size of the opening. If, however, the joint be treated by rest, very many cases do not go on to spontaneous opening; the abscess passes through the stages already indicated of a creamy pus succeeded by a thin serous fluid floating flakes of fibrin; when the fluid is absorbed and the fibrinous masses remain. Frequently, the sac containing these fibrinous curds will become cut off from the joint, and remain quiescent for months or even for years, then rapidly liquefy and empty itself spontaneously, or the contents may be absorbed, undergoing what is believed to be a fatty degeneration. Rarely, during the development of abscess, is there any especial fever or constitutional symptom except such as may be attributed to the pain; and the pain is felt only while the abscess is intra-capsular or is subperiosteal; when once the pus has escaped from the bone or joint, the suffering ceases and almost invariably the general health of the patient improves. The course of the sinuses, which remain after the spontaneous opening of the abscess of hip disease, is towards closure, at least when carious bone is no longer to be drained. A sinus leading to a cavity not connected with carious bone will usually close within a few weeks; one leading to carious bone will remain open until the bone is thrown off, or removed, or drained through some other channel. These spontaneous openings show a much greater tendency to closure than do the sinuses remaining after operative interference; especially is this true if the operative interference has been accompanied with the use of the rubber drainage-tube, the sinuses from which show very little tendency to closure. The course of these abscesses, treated by aspiration, depends entirely upon the nature of the contents, and whether or not they are connected with carious bone. The creamy abscess can generally be aspirated, but it is usually connected with carious bone, and almost invariably refills. The abscess containing the whey-like fluid and fibrinous curds can rarely be evacuated, even through a needle of trocar size, and these also usually refill when aspiration has been attempted. The course of abscess under treatment by incision also depends upon the nature of the abscess cavity; if all the tubercular material at the osseous focus can be removed, it may be expected that primary union will result, otherwise a sinus remains more subject to septic infection than the sinus resulting from spontaneous opening.

Diagnosis.—The diagnosis of hip disease is rendered comparatively easy by what is known as the Thomas flexion-test. This is founded upon our inability to extend an inflamed hip without producing lordosis. By lifting the sound knee until it touches the chest the pelvis is fixed and the spine is straightened (Fig. 12). If there be hip disease the patient is unable to extend the thigh on the diseased side and it remains at an angle. If disease is absent the leg can quite easily be made straight. Few surgeons seem to have observed that if we take any healthy subject and lay him flat upon a table or other hard plane we can easily pass our hand under the lumbar vertebræ (Fig. 13), but if we ask the subject to touch the table with his back he is able to obliterate the hollow without lifting his limbs (Fig. 14). We have here therefore a very ready guide for the detection of deformity. In no case of hip disease is the patient able to straighten his spine, until art has steeped in and corrected the flexion deformity.

The application of the flexion test (Fig. 15) in the case of an infant requires considerable delicacy. A child of two or three years old is brought for examination. A vague history of irritability may be alone complained of, or pain may be occasioned while the child is washed. The surgeon is to find out in the first place whether there is an inflamed joint and if so, on which side. The child is gently put upon the table while the surgeon without exciting alarm holds a knee in either hand. The thighs are slowly flexed towards the chest, when it is observed that one easily yields to full flexion while the other becomes a little rigid (Fig. 16). The stiff hip is then gently allowed to fall while the sound one is fully flexed. It will then be perceived that the diseased limb remains at an angle and cannot be fully extended. Stress must be laid upon the necessity of not startling the child and in not using the slightest force; while care must be taken first, not to flex the pelvis upon the spine (Fig. 17), and secondly, to conduct the examination upon an even flat surface. Although this test is not absolutely diagnostic, if the hip be complained of and pelvic, vertebral, sacro-iliac and malignant disease be negatived, one can fairly infer the presence of coxitis.

Differential diagnosis.—Hip disease is perhaps more often confounded with Pott's disease at the lumbar spine than with any other one condition. In Pott's disease the only motions at the hip joint which are restricted are those in which the psoas muscle is put upon the stretch, namely, extension and inward rotation while in the fullest possible extension.

Sacro-iliac disease restricts the motions at the hip joint in precisely the same way as does Pott's disease, flexion, and rotation during flexion, being perfectly free.

The neuromemitic or hysterical hip (Fig. 18) is the most difficult of all to differentiate. All the subjective and many of the objective symptoms of true hip disease may be present. In untreated cases, however, mascular shrinking is rarely present; and the muscular resistance to attempted passive motion is somewhat different to the trained touch from that experienced in true disease. Furthermore hysterical condition are rarely present except in young women, and the history of repeated attacks together with the facial expression often gives a hint in the right direction.

Congenital dislocation and infantile paralysis have both been mistaken for hip disease, but a careful examination should exclude such a mistake. In both the range of motion is nearly normal, or greater than normal, in some or all directions; there is no muscular spasm and no history of pain or suffering.

Prognosis.—In considering the prognosis, the duration and the ultimate result as to life, the deformity, and the usefulness of the limb have to be taken into

account. Of cases of hip disease not subjected to operative interferance, only about 8 per cent. die. Nearly all of these die from tubercular meningitis; a few die from waxy degeneration of the liver and kidneys following upon prolonged suppuration. Tubercular meningitis may attack a patient during the early months of the disease, during its later course, or when about cured, or even months after a cure has been effected. It does not seem to bear any relation to the development or course of the suppuration in unoperated cases, but it does seem to have a direct relation to those that have been subjected to the operation of incision and erasion, or scraping, of an abscess cavity. The patient attacked with tubercular meningitis, so far as we know, always succumbs to the disease.

The duration of hip disease under efficient mechanical treatment is from one to three years, although cases do sometimes continue for much longer periods. The ultimate result as to deformity depends upon the mechanical appliances used in the treatment, upon the care which the patient receives from the surgeon, and upon his home surroundings; few, if any, cases should be allowed to recover with other deformity than the shortening due to arrested growth and actual bone destruction, though as a matter of fact not a few cases to-day do recover with some degree of flexion and adduction. The amount of actual shortening depends upon the duration of the disease and the location of the tubercular focus more than upon the amount of suppuration. Some cases that have had several abscesses recover without shortening, while others that never have had abscesses recover with marked shortening. The shortening is rarely more than an inch in cases where subluxation has not occurred; but as time goes on and growth takes place after the cure has been effected, a few cases show an increased degree of difference in the lengths of the two legs, then as much as two or three inches difference may be found. If the joint be enchylosed, or nearly stiff, and if there be some degree of flexation and adduction, shortening becomes a serious disability, but if the joint motion be of fair extent and if there be no flexion and a possibility of movement in the direction of abduction, compensatory lengthening takes place, and a real shortening of from one to three inches may not require any artificial lengthening of the member to render walking comfortable and graceful. A certain number of joints recover anchylosed, or with so little motion, that for the purpose of use the anchylosis might as well be complete; their number is uncertain, but the stiffness appears to depend upon the duration of the disease, the severity of the inflammation, and the ineficiency of the immobilization. Stiff joints do not result from immobilization, but from the lack of it, and suppuration is no indication that stifness must result. We have seen cases that have had as many as six sinuses recover with normal motion, and on the other hand other cases in which no suppuration was ever made out recover with perfect stiff joints. Cases that never have been immobilized not infrequently recover with perfect anchylosis, while numerous cases perfectly immobilized for as long as six years have recovered with practically normal mobility. To attempt the prognosis of any individual case at the time of the first observation should not be attempted. It is not possible to tell how any case may turn out. Nothing more than a guess can be formulated, and this must be founded upon the family history, the general physical condition of the patient, the duration of the symptoms, the existing condition of the joint, the surroundings of the patient, the care he is likely to receive, and the faithfulness, or the contrary, with which he may be expected to follow the directions given.

COMPARISON OF MARKET FLUID EXTRACTS AND THEIR RELATION TO FIFTY PER CENT. TINCTURES.

Read in the Section of Materia Medica and Pharmacy, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

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The question of the variability of fluid extracts as made from different lots of drug, by different manipulators, has often been discussed, and the suggestion has been made that if substituted by 50 per cent. tinctures, retail pharmacists could profitably make their own products.

It has even been asserted that 50 per cent. tinctures would average to be as strong as many market fluid extracts.

To arrive at an impartial verdict we have kept the record of 300 lots of fluid extract of dandelion U. S. P., and 250 lots of fluid extract of wild cherry U. S. P., made by as many operators from four uniform lots of drug.

The dry extractive from the dandelion was 26, 28, 30 and 38 per cent.

The range obtained by the 300 students was from 8.5 per cent. to 31 per cent.

The glycerin extractive from the wild cherry was 27, 28.8, 26.8 and 31 per cent.

The range obtained by the 250 students was from 14.4 to 31 per cent. Fifty-two different drugs were then selected, submitted to assay for extractive, alkaloid, etc., and made into fluid extracts by twelve members of the graduating class.

A similar line was made by one of my assistants and the assays made by a second assistant.

Two hundred and fifty market samples of fluid extracts were submitted to examination by the same parties.

A small line of 50 per cent. tinctures, made in duplicate, at different times, under the ordinary vicissitudes of store work, was made and examined by Mr. Newhall. The various results are embodied in the accompanying tables.

In considering these figures certain alowances should be made: First, some of the workers may have been more careful and obtained closer results than others; second, the moisture in the drugs was found to vary from 5.5 to 20 per cent., so that using the same menstruum with such drugs, there is variation by hydration. In one case a 45.5 per cent. alcohol becomes 43.22 per cent., and in the other 37.9 per cent.

A dry drug containing much gum or albuminous matter percolated with strong alcohol, may abstract water and increase the alcoholic strength by one or more per cent.

In all the tables where alcoholic strength of menstruum is referred to, per cent. in absolute alcohol by weight is indicated.

The alcohol strength of the fluid extracts was found by mixing 25 G. with 100 G. of water, distilling 100 G. in a properly sealed apparatus, taking sp. gr., finding alcohol weight strength of distillate by U. S. P. 1880 tables and multiplying by four. This gives the alcohol strength of the fluid extract.

To find the alcohol strength of the menstruum, the following method was employed:

As the extractive occupies the space of liquid, by subtracting the per cent. of extractive from 100, we have the weight of liquid in the fluid extract, and dividing the per cent. of alcohol in the fluid extract by the weight of liquid, gives the per cent. of alcoholic menstruum used.

A fluid extract gives 40 per cent. alcohol and 20 per cent. extractive; 100 G. less 20 G. leaves 80 G. of liquid; then 80: 100:: 40 per cent.: 50 per cent.

Third. Extractive is no positive criterion of the therapeutic value of a drug, but may furnish a method of determining exhaustion.

The quantity of extractive, the quality of the extractive, and physical incompatibilities of the fluid extract are, of course, entirely changed by slight variations in menstruum.

Extractives were determined by evaporating to near constant weight on a water bath. In extractives containing glycerin there is a constant, gradual loss from evaporation of glycerin.

Different lots of the same drug may vary 70 per cent., as from 14 to 24.

Fourth. Temperature alters the action of extraction. A range of 15° F. with same rate of flow at low temperatures, may make a difference of 10 per cent. more or less in the extractive from the same drug, by the same menstruum. That is, a range of 27 to 30 per cent., or 18 to 20 per cent.

Fifth. Tne relative amount of extractive obtained by exhausting 10 G. of drug with a menstruum may differ from that obtained from 10,000 G. of the same drug, owing to longer contact and greater alteration of the menstruum from its becoming a compound solvent.

Sixth. The therapeutic effect is affected by alcoholic strength.

NOTES.

Aromatic Powder.—A variation of over 300 per cent.

Belladonna Root.—Great variation in menstruum. The market samples with weak menstruum give a very dark-colored fluid extract whose high gravity is increased by glycerin. They will not make the U. S. P. lin. belladonna. The U. S. P. is a very light brown product.

Benzoin.—A variation of 400 per cent. One weaker than the U. S. P. tincture.

Benzoin Compound.—Tincture made from label directions varied from 9 to 19 per cent.

Buchu.—Market samples green in color and excessive in alcohol strength. U. S. P. 1880, olive brown. See 50 per cent. tinctures in comparison.

Cascara.—For therapeutic value of different constituents, effect of old and new bark and comparison of fluid extracts, see thesis by A. A. Burnham, Massachusetts College of Pharmacy. Another investigator claims to have found nux vomica in some specimens of fluid extract of cascara.

Cotton Root.—Notable variations.

Cramp Bark.—Variation of nearly 100 per cent. in extractive, 300 per cent. in alcohol.

Dog grass.—Made by U. S. P. method has a different flavor than when made by repercolation.

Ergot.—One sample only as weak as a 50 per cent. tincture.

Grindelia.—Variation in color is made by difference in alcohol strength.

Hydrastis.—Note variation in alcohol. In addition, samples of so-called aqueous goldenseal and samples of colorless were examined.

Ipĕcac.—Market samples were entirely different from U. S. P. in alcohol and resin. Evidently made by repercolation instead of the tedious U. S. P. method.

Marigold.—Very likely to gelatinize with weak alcoholic menstruum.

Quassia.—Variation of 150 per cent. in alcohol.

Sarsaparilla.—Variation of 200 per cent. in extractive and 120 per cent. in alcohol. Samples of compound fluid extract found to be made in some cases from oil of wintergreen and sassafras, without drug. So made, they mix freely with syrup, while U. S. P. will not.

Scullcap.—Made with U. S. P. menstruum will not remain clear.

Squill.—Variation of over 700 per cent. in extractive and 800 per cent. in alcohol. Made with weak menstruum has rich, deep color, having no resemblance to the U. S. P., in taste is much pleasanter, and mixes with syrup. U. S. P. is pale amber color and is bitter.

Wild Cherry U. S. P., represents all the astringent, sedative, tonic power of the drug, but cannot mix with syrup or aqueous vehicles. Market substitutes in no case represent the U. S. P.

H. A. Baker, class 1886, found fld. ext. U. S. P. 1880, made from virgin bark, to contain 3.06 drops of 2 per cent. hydrocyanic acid to a fluid dram. By repercolation, 3.32 drops. By 1870 method, 2.46 drops. 1860 method, 1.29 drops. Market sample, .84 drops. Syrups, .447 and .48 drops.

Page found in market samples 3 drops, 2.8 drops and 2 drops, but little bitter principle. All were made to mix with syrup.

It is seen that fluid extracts average much stronger than 50 per cent. tinctures.

Name of Fld. Ext.	Ext. found in Drug.	Per cent. Absolute Alcohol in Menstruum used.	Extractive found in fluid Ext.	Per cent. Absolute Alcohol found in menstruum.	Student.
Aromatic Powd., U. S. P.	2.04	91	10.02	67	Kaulback
" " Reperc			10.01	68	
" " No. 1 Com.			7.7	69	
" " No. 2 "			6.11	58	
" " No. 3 "			2.34	46	
" " No. 4 "			7.4	89	Assistant.
Belladonna Rt., U. S. P.		91	5.6	92	Bickford.
" " Reperc			7	89.6	
" " No. 1			16.3	68	
" " No. 2			16	58	Alkaloid.
" " No. 3			15.4	57	
" " No. 4			9	.3	Assistant.
" " No. 5				91 .4	
" " No. 6			10	.42	
				90 .44	
Benzoin, own		91	62.6		Page
" No. 1			43.9		Ext. in U.S.P.
" No. 2			35.3		Tinct. 14.20%
" No. 3			12.06		
" No. 4			38.4		Assistant.
Benzoin Compound, own		91	68.8		Page
" " No. 1			53.8		Ex. in U. S. P.
" " No. 2			36.8		Tr. 19.27%
" " No. 3			35.6		By labels 9 to 19%
" " No. 4			77		
" " No. 5			42.8		Assistant.
Boneset, U. S. P.	19.8	45.5	22.3	43.03	Sargent.
" Reperc			22.8	43.67	
" No. 1			21.6	40.15	
" No. 2			23.4	40.15	
" No. 3			23.6	43.4	
" No. 4			27.6	43	Assistant.

Name of Fld. Ext.	Ext. found in Drug.	Per cent. Absolute Alcohol in Menstruum used.	Extractive found in Fluid Ext.	Per cent. Absolute Alcohol found in Menstruum.	Student.
Blackberry Rt. U. S. P.	34.3	41.	32.63	44.	Whittemore.
" Repere.		Glye. 20	31.3	43.8	
" No. 1.			20.9	36.9	
" No. 2.			30.9	20.6	
" No. 3.			32.6	47.9	
" No. 4.			40.7	40.	
" No. 5.			37.2	39.5	Assistant.
Blue Cohosh, U. S. P.	25.6	68.25	22.4	59.8	Whittemore.
" Repere.			19.3	66.8	
" No. 1			20.3	64.4	
" No. 2			19.7	49	
" No. 3			24.5	83	
" No. 4			23.7	67	
" No. 5	24.7		23.7		
Buchu (Short), U. S. P.	25.	60.7	26.9	62	Stearns.
" " Repere			25.1	72	
" " No. 1			8.5	85	
" " No. 2			18.3	83	
" " No. 3			18.4	60	
" " No. 4	24.6		23.8	60	Assistant.
" " No. 5			26.4	59.5	
Butternut Bark, U. S. P.	23.3	45	22.4	44	Kaulback.
" " Repere			18.6	42.1	
" " No. 1			18.7	44	
" " No. 2			23.9	42.2	
" " No. 3			16.9	43	
" " No. 4	25.		24.4	42	Assistant.
" " No. 5	14.		15	43	
Calamus, U. S. P.	13.9	91	16.2	88.5	Sargent.
" Repere			15.8	89.2	
" No. 1			12.5	81.9	
" No. 2			14	84.4	
" No. 3			14.3	86.1	
" No. 4	17.5		16	88	Assistant.
					Resin.
Cannabis Indica, U. S. P.		91	18.4	91.3	12.8 Glover.
" " Repere.			15.6	88	12.4
" " No. 1			9.88	89.5	8.6
" " No. 2			10.75	88	9.3
" " No. 3			16.7	87.5	13.6
" " No. 4			10.5	92	8.7
" " No. 5	15.4		14	90	8.2 Assist
" " No. 6	13.2		13.6	89.5	10.2
Cascara, own		30.3	34		Sampson.
" Repere			30.4		
" No. 1			22.6		
" No. 2			22.4		
" No. 3			20.2		
" No. 4	30.8		29.10	31	Assist.
" No. 5	30 8		30.6	29	
			Without glye.	Glye.	
Chirata, U. S. P.	9.75	40.5	8.7	6.35 45.7	Barnard.
" Repere		10. glye.	5.8	6.3 43	
" No. 1			6.7	6.2 48.7	
" No. 2			4.8	48.5	
" No. 3			7.15	4.5 42.4	
			inc. glye.		
" No. 4			15	40	Assist.
" No. 5			19	39	
Cimicifuga, U. S. P.		91	14.6	91	Stearns.
" Repere			13.3	86	
" No. 1			13.4	85	
" No. 2			22.4	70	
" No. 3			27.9	50	
" No. 4	15.9		13.8	89	Assist.
" No. 5			14.2	90	
			without glye.	glye.	quin.
Cinchona, U. S. P.		68.25	29.1 19	71	2.7 Glover.
" Repere		glye.	23 16	70	2.5
" No. 1			18 33	32	2.15
" No. 2			22 9	45	1.92
" No. 3			14 32	61	2.2
" No. 4			17 24	68	2.01
" No. 5			35 inc. glye.	2.1	Assist.
				2.3	
				2.9	
				4.0	
Columbo, U. S. P.	13.85	45.5	12.18	45.5	Barnard.
" Repere			11.35	46	
" No. 1			11.95	60.3	
" No. 2			7.60	41.7	
" No. 3			11.53	59	
" No. 4	14.3		11.2	44	Assist.
Convallaria, Rt.		54.6	41	56	Bickford.
" Repere			35.8	58	
" No. 1			23.5	49	
" No. 2			28	50	
" No. 3			12.6	36	
" No. 4			38	52	Assistant.
" No. 5			36.6	50	
Corn Silk		45.5	11.7	41	Bickford.
" Repere.			7.6	41.3	
" No. 1			8.6	20	
" No. 2			6	41.8	
" No. 3			3	15.8	
" No. 4	12.5		12.8	43	Assistant.
" No. 5	9.4		9	44	
				glye.	
Cornus, U. S. P.	12.1	36.4 Alc.	11.15	16 41	Barnard.
" Repere		20 Glye.	12.15	16 41	

Name of Fld. Ext.	Ext. found in Drug.	Per Cent. Absolute Alcohol in Menstruum used.	Extractive found in Fluid Ext.	Per Cent. Absolute Alcohol found in Menstruum.	Student.
Cornus, No. 1			11.9 15	68	
" No. 2			10.8	40	
" No. 3			12.9 19	51	
			inc. glye.		
" No. 4			21.8	35	Assistant.
" No. 5			28	34	
Cotton Root Bark	25.75	59 Alc.	25.6	42	Whittemore.
" " Repere		33 Gly.	20	70	
" " No. 1			17.5	47	
" " No. 2			7	41	
" " No. 3			8	62	
			inc. glye.		
" " No. 4	41	inc. glye.	30.2	60	Assist.
" " No. 5			35	59	
Coto Bark	18.5	80	24.8	70	Kaulback.
" Repere			25.8	67	
" No. 1			23.8	68	
" No. 2			13.9	60	
" No. 3			11.3	58	
" No. 4			11		
" No. 5			23	70	Assist.
" No. 6			24	78	
Cramp Bark		60.6	22.2	62	Bickford.
" Repere			21.5	62	
" No. 1			13	54	
" No. 2			12	42	
" No. 3			12	16	
" No. 4		55	19.8	54	Assist.
" No. 5			23	53	
Digitalis, U. S. P.	30	68	27.6	64	French.
" Repere			23	70	
" No. 1			20	40	Palm's
" No. 2			34	26	Digitalin
" No. 3	28.8		29.8	65	.32 Assist.
" No. 4			25	66	.24
Doggrass, U. S. P.	36	18	39.8	18	Sargent.
" Repere			40.8	17	
" No. 1			34	15.5	
" No. 2			38.8	15.2	
" No. 3			39.4	15.4	
" No. 4	43		42	16.0	Assist.
" No. 5			37.6	15.5	
Ergot, U. S. P.	16	39	16	38	Sampson.
" Repere		HCl	11	37	
" No. 1			22.4	38	
" No. 2			16	37	
" No. 3			10	25	
" No. 4	16.2		15.4	40	Assistant.
" No. 5	18.4		17.6	39	1- 23.86 extractive.
Frangula, U. S. P.		30.3	26	28	Stearns.
" Repere			23	37	
" No. 1			15	40	
" No. 2			28.2	45	
" No. 3			28.5	53	Assist.
" No. 4			20.8	30	
" No. 5			26	29	
Gentian, U. S. P.	39.5	45.5	29	44	Barnard.
" Repere.			27 glye.	45.7	
" No. 1			29 6.5	65	
" No. 2			24	42	
" No. 3			32	49	
" No. 4	32		32.4	44	Assistant.
" No. 5	43		40.9	42	
Geranium, U. S. P.		41 Alc.	26	36	Barnard.
" Repere		10 Gly.	22	44	
" No. 1			28.7	39	
" No. 2			23.5	23	
" No. 3			25	50	
" No. 4			19	37	
" No. 5			32.7 9	39	Assistant.
" No. 6			29.9 8.5	40	
Grindelia, U. S. P.		68	25.5	75	
" Repere			24	70	
" No. 1			14	80	
" No. 2			18	39	
" No. 3			25	65	
" No. 4			14	90	
" No. 5	27.5		25.2	66	Assist.
Hydrastis, U. S. P.		69	22.2		Bickford.
" Repere			21.6	67	
" No. 1			20.8	68	
" No. 2			16.2	40	Hydras-
" No. 3			15.4	48	tine.
" No. 4	23		21.6	68	1.42
" No. 5			23.2	67	Berb. Assist. 2.1
					Ermetine. .32 Strong.
Ipecac, No. 1					.36
" No. 2					.34
" No. 3					.92
" No. 4					.98
" No. 5					1.44 Assist.
" No. 6					1.51
" No. 7					1.60
" No. 8					2.10
" No. 9					1.30
" No. 10					
Kava Kava	7.9	54.6	6.3	49	
" Repere			5.9	50	
" No. 1			4	50	
" No. 2			6.5	43	
" No. 3			7.4	67	

Name of Fld. Ext.	Ext. found in Drug.	Per Cent. Absolute Alcohol in Menstruum used.	Extractive Fluid Ext.	Per Cent. Absolute Alcohol found in Menstruum.		Student.
Kava Kava, No. 4	11		7.6	53		Assist.
" No. 5			6.8			
					Caff.	
Kola Nut	10.4	20	12.4	18.3	1.8	Wilbur.
" Repere			9	19.5	.8	
" No. 1			4.8	50.8	1.8	
" No. 2			12.6	18.2	1.8	
" No. 3			5.5	21	1.6	
" No. 4	14				.46	Assist.
" No. 5					1.6	
Logwood	8.4	45	10.4	43		Sargent.
" Repere			9.8	42.4		
" No. 1			6.9	37		
" No. 2			7.6	40		
" No. 3			7.6	42		
" No. 4			7			
Mandrake, U. S. P.	5.46	68	15.7	66	5	Day.
" Repere	Resin		11.6	67	4.3	
" No. 1			15.5	67	6	Assist.
" No. 2			28	40	3.25	16% Ext.
" No. 3			15.7	72	5.6	4.4 Resin.
" No. 4			10.6	48	2.75	5.3
Marigold	36	45.5	28	32		Wilbur.
" Repere			20	45		
" No. 1			13.7	75		
" No. 2			24.2	42.3		
" No. 3			15.3	72		
" No. 4	35		26.4	43		Assist.
Mezereum, U. S. P.	11.9	91	14.5	91		Wilbur.
" Repere			8	92.8		
" No. 1			7.76	69.8		
" No. 2			12.3	90.2		
" No. 3			4.8	87.6		
" No. 4			15.8	90		Assist.
" No. 5			15.8	89		
" No. 6			12.8	88.6		
Nux Vom., U. S. P.	12	80	11	80		Sampson.
" Repere			9	80		
" No. 1			10	80		
" No. 2			4.11	85		Assist.
" No. 3			3.47	90		15 lots ranging 11.5 Ext. to 18.15 Ext., from 1.63 Alk. to 3.5 and from .95 to 1.7 Strych.
Pilocarpus, U. S. P.	23.7	45.5	21	40.6		French.
" Repere			17.6	46.3		
" No. 1			21.7	38.5		
" No. 2			36.4	28		
" No. 3	24 Ext. .74 Alk.					.72 Alk. Ast.
P. Ash Bark, U. S. P.	15.5	91	15			Kaulbach.
" Repere			14			
" No. 1			12.3			
" No. 2			12			
" No. 3			12.1			
" No. 4	19.8		17.5	89		Assist.
" No. 5			14.7	90		
Quassia, U. S. P.	2.91	45.5	1.8	43.5		French.
" Repere			2.04	45.2		
" No. 1			1.76	40.5		
" No. 2			2.08	18.6		
" No. 3	2.75		2.2	43		Assist.
" No. 4			3.1	40		
Red Clover		45.5	18	40		Bickford.
" Repere			20	38.4		
" No. 1			12.4	46.6		
" No. 2			14.3	48.6		
" No. 3			12	30.5		
" No. 4			15.3	43		Assistant.
" No. 5			22.8	41		
			Glyc.			
Rhatany		36.4	28	16	49	Glover.
" Repere		20 Gly.	27.3	14	43	
" No. 1			22	10	37	
" No. 2			11.8	9	24	
" No. 3			15.6		49	
" No. 4			10.1	18	50	
" No. 5	With Glyc.	44.15	42.6		35	Assist.
Rhubarb, U. S. P.		68.2	41.7		73	Day.
" Repere			38.6		73	
" No. 1			37		66	
" No. 2			37.5		42	
" No. 3			35.7		58	
" No. 4			36	11.2	47	
" No. 5	35.9		34.8		65	Assist.
" No. 6	40.2		38.5		67	
Sarsaparilla		27	26.2		25	Day.
" Repere		10 Gly.	22.9		30	
" No. 1			25.3		31	
" No. 2			11.7		18	
" No. 3			19.7		40	
" No. 4			8		38	
" No. 5			20		25	Assist.
" No. 6			26		22	
Scullcap, U. S. P.	20.6	30.3	15.9		25	French.
" Repere			12.7		29	
" No. 1			17.6		45	
" No. 2			24.6		43	
" No. 3	23.2		19.2	5	41	Assist.
" No. 4			21.7	5	42	
Senega, U. S. P.		60.6	42.5		64	Stearns.
" Repere			41.7		68	
" No. 1			23.2			
" No. 2			30.6			
" No. 3			33		62	
" No. 4	35.3		33.4		59	Assist.

Name of Fld. Ext.	Ext. found in Drug.	Per Cent. Absolute Alcohol in Menstruum used.	Extractive Fluid Ext.	Per Cent. Absolute Alcohol found in Menstruum.		Student.
Squill, U. S. P.	4.5	91	5.85	84.3		Wilbur
" Repere			5.89	90.7		
" No. 1			3.58	89.9		
" No. 2			31.7	9.4		
" No. 3			35	21		
" No. 4			5	90.6		Assist.
" No. 5			4.2	89		
				Resin.		
Tolu, Sol. N. F.				.575		Page.
" No. 1				.63		13
" No. 2				.56		
" No. 3				.696		
" No. 4				.56		
Wild Cherry, U. S. P.		50	37.2	14		
" Repere		Water 2	37.6	23		
" No. 1		Glyc. 1	29.4	27		
" No. 2		then	35.5	18		
" No. 3		dil. Alc.	31.1	26		
" No. 4			28.8	14.4		
Yellow Dock, U. S. P.	24.1	45.5	26.9	44		Sargent.
" Repere			25	43.5		
" No. 1			22.7	41		
" No. 2			23.1	40		
" No. 3			25	42		
" No. 4			27.6	43		Assist.

TABLE OF 50 PER CENT. TINCTURES.—NEWHALL.

Drug.	U. S. P. Menstrua.	Per Cent. Extractive in Drug.	Per cent. Ext. in 50% Tinct.	Do. A. Reserve 50 c.c.	Do. B. Reserve 50 c.c.	Do. C. Reserve 50 c.c.	Total Extractive.
Gentian	45.5	37.7	19.5	1.3	.9	.5	41.7
			20.2	.8	.7	.3	42.2
Ergot	39.	18.1	8.4	.4	.7	.4	18.3
	HCl.		8.4	.8	.4	.3	18.3
Columbo	45.5	14.2	4.4	1.7	1.3	.9	12.7
			4.2	1.8	1.5	.95	12.66
Dandelion	38.4	32.8	16.5	.9	.9	.8	35.6
			16.7	.9	.5	.4	35.8
Ginger	91.	5.	2.2	1.4	.3	.3	6.7
			2.4	1.2	.2	.2	6.4
Buchu	60.7	25.	11.8	1.3	.9	.6	26.4
			12.1	1.2	.6	.5	26.5
Mandrake	68.25	16.8	7.	0.9	.8	.4	16.1
			7.4	0.8	.7	.3	16.6
Rhubarb	68.25	39.7	18.1	1.2	1.1	.5	39.
	To	tal Alk.	19.4	1.3	.6	.4	41.1
Nux Vomica	81.	3.55	.9	.4	.4	.4	3.
			.9	.4	.3	.3	2.8
		Strych.	.8	.3	.3	.2	2.
		1.85	.2	.2	.3	.1	2.1
Coca	45.5	Alk.	.24	.04	.0	.0	.52
		.5	.20	.10	.01	.0	.51

REMOVAL OF THE GASSERIAN GANGLION.

A Clinical Lecture Delivered at Mercy Hospital.

BY EDMUND ANDREWS, M.D.,

OF CHICAGO, ILL.

On Saturday, January 7, Dr. Edmund Andrews performed for the fourth time, at Mercy Hospital, Chicago, his operation for the removal of the Gasserian ganglion. The patient was a woman and furnished typical indications for the operation, having suffered for years with a tic douleureux of the right side. She had previously undergone two operations, she said, presumably section and avulsion of the nerve, with the usual result, viz: a return of the agonizing pains in the course of about two months. When Dr. Andrews first conceived the idea of such an operation, he had satisfied himself that these obstinate trigeminal neuralgias usually have their origin in defective teeth which give rise to a neuritis involving first the inferior dental nerve and gradually progressing until the entire inferior maxillary branch of the fifth nerve is involved, that it ascends as far as the semilunar ganglion and stops there, not being transmitted beyond to the brain because of the difference in structure between the proximal and distal portions of the fifth nerve. His logical conclusion was that if the removal of the ganglion could be effected, the intolerable suffering of the patient would be relieved.

After a great deal of experimentation upon the cadaver, six different methods of procedure were devised for the accomplishment of the end in view, one of which Dr. Andrews now regards as the best and will be herein briefly described as the writer witnessed it last Saturday.

The field of operations was rendered as aseptic as possible, the right side of the scalp being shaved and the utmost pains being taken to guard against infection. Beginning near the external angular process a curved incision was made extending horizontally above the zygomatic arch, curving down in front of the ear and terminating near the angle of the jaw care being taken to avoid the pes anserinus. The flap thus made was turned down and stitched to the ala of the nose; the zygomatic arch was sawed through at each extremity and reflected down carrying with it the attached masseter muscle; the coronoid process of the lower jaw was then sawed off and turned up on to the temple, carrying with it the attachment of the temporal muscle, and was stitched to the scalp. Now some fat and connective tissue was exposed containing in it the internal maxillary artery, which was tied. Persistent oozing hæmorrhage had compromised each step of the operation and was particularly troublesome at this stage; the blood would well up into the wound almost as fast as an assistant could sponge it away, and owing to this masking of the parts involved, the operator had to literally feel his way in the dark. Search was now made for the inferior dental nerve which should serve as a guide to the foramen ovale, but it was not found, owing no doubt to the fact that it had been entirely torn away at one of the former operations. Therefore the finger of the operator felt for the posterior sharp edge of the external pterygoid plate of the sphenoid bone and passed it up to its base, near which the foramen is situated, and through which a probe was passed, the ganglion being transfixed thereby. Just external to the foramen ovale is a triangular free space on the under surface of the base of the skull and here a specially devised trephine with a long shank and a long center pin, was applied and the button of bone removed. The narrow isthmus of bone intervening between the trephine hole and the foramen ovale was bitten away with a pair of rongeur forceps and through the large opening thus made a surgical spoon was passed and the ganglion scraped away.

In closing up the wound Dr. Andrews advocates wiring together the bones sawed through, but in this particular case it became necessary to dispense with this procedure, owing to the manifestation by the patient of symptoms of collapse—due chiefly to the hæmorrhage, partly also to shock—from which however she rallied nicely after being put to bed, receiveng hypodermic injections of digitalis and strychnine and the application of heat.

Time required for the operation was about two hours. To the bystander it seemed a formidable one—as it was a tedious one to the operator. But it must be remembered that the patients suffering with this trouble will invite almost any conditions whatever that will offer them escape and always say that if the operation wont bring them relief, they prefer not to awake from the anæsthetic.

As previously stated, this is the fourth time that Dr. Andrews has performed this operation. The first two, over a year ago, were followed by excellent results, *i. e.*, complete relief up to the present date; the third died of shock from the operation; and it is said, to have been once successfully performed by Dr. Edward Kerr of Chattanooga, a time or two in Philadelphia, once unsuccessfully by Victor Horsley, an English Surgeon, and something like seven times by Dr. Rose, of King's College Hospital London, without a death. It is rather a remarkable concidence that Drs. Andrews and Rose, one in England and one in America, entirely unknown to each other should have arrived at the same conclusions as to the advisability of removing the semilunar ganglion for the relief of facial neuralgia, and should have acted upon these conclusions at almost exactly the same time. These gentlemen since first hearing of the doings of each other, have been carrying on a personal correspondence exchanging views and plans and experiences relative to the fifth nerve. It would seem that to Dr. Andrews belongs the credit of first perfecting the operation and performing it on the cadaver, but, that Dr. Rose first undertook it upon the living subject.

Carl Stutsman, Chicago Med. Coll., Jan. 9, '93.

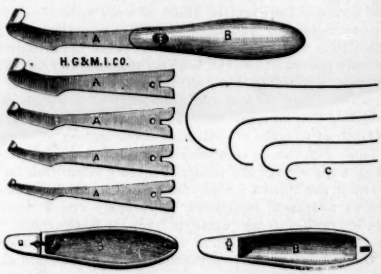
KNIFE CURETTE. ESPECIALLY ADAPTED FOR OPERATIONS ON THE BONES AND CARTILAGES.

BY A. H. MEISENBACH, M.D.,
PROF. SURGERY IN THE MARION-SIMS COLLEGE OF MEDICINE, ST. LOUIS, MO.

This instrument is fashioned somewhat after the farrier's knife.

It consists of a blade (*a*) placed in a seperable handle (*b*) as shown in the upper figure of the cut.

The cutting part of the blade is placed at an obtuse angle to the shaft: This gives a greater degree of leverage. The end of the blade is bent upon itself so as to form a loop or part of a circle. By means of this construction, the instrument has a round as well as a linear cutting edge.



The handle is made of metal in two seperabel parts, with a simple but effective lock and catch, as is seen in the lower figure of the cut. There are four blades of various sizes.

The figures are of one third actual size, with the exception of outline figures, (*c*) of the loops of cutting blade, which are actual size.

The various blades may also be attached to solid metal handles if so desired, and bulk is no objection.

With the seperable handle the instruments can be more compactly placed in a small neat case; which

is especially desirable where different sizes of the instrument may be wanted at hand; for hospital work the solid handles, possibly may be of more satisfaction, The construction of the instrument is such that it is easily kept aseptic.

To the practical surgeon the many uses to which this instrument can be put will readily suggest itself.

In operations on the long bones as in osteo myelitis, superficial necrosis etc; on the joint surfaces in the removal of the tubercular masses and foci operations in the petro-mastoid region, and many other instances too numerous to mention. In many cases it may take the place of the chisel, if properly constructed and of right temper. The form of its construction makes it a peculiarly powerful instrument with which rapid and effective work can be done, and its advantages over the ordinary forms of curette especially in bone work can easily be appreciated. I believe this instrument will be a valuable addition to the armamentarium chirurgieum of the general surgeon. [1]

DOMESTIC CORRESPONDENCE.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

I am not willing to allow the statements in the editorial article on "Removal of the Ovaries as a Therapeutic Measure in Public Institutions for the Insane" in THE JOURNAL for February 4, to pass without question. I presume the statements are made on the authority of the distinguished chairman of the Lunacy Committee, of the Pennsylvania Board of Public Charities. Now, while I cheerfully concede Dr. Morton's distinction as a surgeon and teacher and acknowledge my obligations to his many valuable contributions to surgical literature, I cannot allow his sweeping assertions upon this question to pass without a mild protest.

Several years ago my attention was attracted by the statement frequently made in medical societies to the effect that many abdominal sections with removal of the uterine appendages had been done in American Insane Hospitals with a view of the curative effect of such operations upon various psychoses and neuroses. The assertion was perhaps still more frequently made that these operations had not only proven of no avail but also that insanity not rarely followed removal of the uterine appendages for other diseases. As I had no personal knowledge of any such cases, and could find no trustworthy accounts based upon facts, I determined to make a "collective investigation" of the subject and with this in view addressed a letter to every medical officer in charge of a public or private institution for the insane in the United States and British America. The officers so addressed responded courteously and I received detailed replies to my questions from 121 institutions. The results of an examination of these answers were reported to the American Medico-Psychological Association at its meeting in Washington last May. I found that only 39 such operations had been performed in the last ten years upon patients at the time in the care of these institutions. To these I could add, at that time 14 operations performed by myself in this hospital. Of these 53 cases operated upon seven have been mentally cured and discharged from the hospitals.

Twenty-six cases of insanity following operations upon the sexual organs were reported to me from these 121 institutions; but of these eight had recovered and been discharged showing that the mental aberration following the operation had been only temporary; two were in an improved condition, four had died and twelve remained under treatment, showing indeed a very small proportion of persons insane enough to demand hospital or asylum restraint.

I am compelled therefore to disagree with the sweeping statement that these "experimental mutilations" (?) were either frequent or that their "ultimate success" is doubtful. More decidedly still do I disagree with the assertion that "many insane, epileptic and hystero-epileptic women, who have been thus mutilated (?) have subsequently found their way into hospitals for the insane, and are heard of no more." If the hospital and asylum superintendents have made true reports to me, and I am sure they have, then the "many" women who have become insane after operations on the sexual organs do not exceed twenty-six in number. This is, I am sure a very small percentage of the total number of abdominal sections done in this country in the past ten years. I am now studying the question of the special causation of the post-operative insanity in these cases, and believe I shall be able soon to give a rational explanation for the same.

I venture to go a little more in detail into some of the results obtained in my own practice with removal of the appendages in insane women. In one of my cases a hystero-epileptic mulatto woman, the patient had been an inmate of the hospital over seven years. Her convulsive attacks followed by violent maniacal outbreaks appeared to be closely connected with the menstrual periods. On these occasions she was wild and destructive; breaking, tearing, and fighting patients, attendants and physicians. She showed no tendency to improvement—rather the reverse. She was comparatively lucid in the intervals, anxious to get well, and asked to have the operation performed. She was discharged five months after the operation, apparently entirely restored and has since been earning her living as a domestic servant. She has had no recurrence of the convulsive or maniacal attacks.

Two cases were puerperal insanity; one in the second, the other in the third attack. Both of these women are now at home attending to household duties. In both there were lesions of the pelvic organs, sufficient in my opinion to justify the operation.

Another case of profound melancholia with onomatomania is sufficiently recovered to be at home assisting her mother in the household duties. In a letter written February 2, nearly four months after her discharge she reports herself as gaining mental strength and being almost free from the annoyance of the "inward voice" that formerly worried her so much.

Another case of melancholia with suicidal tendencies has recovered after repair of a badly lacerated cervix and has been discharged.

None of the cases upon whom I have operated have been made worse. I believe I shall soon be able to discharge others of those operated upon, as some show progressive improvement.

I deny then the assertion that the success of these operations in proper cases is "doubtful," "the distinguished chairman of the Lunacy Committee" of the Pennsylvania Board of Public Charities notwithstanding.

I do not know enough of jurisprudence to say whether the contention, of "the legal member of the Lunacy Committee" that neither an insane woman, nor her relatives can give legal consent to the performance of an operation upon her, is good law or not. I do not hesitate to say, and in this I am sure I will be supported by nine-tenths of American men and women, that it isn't common sense. If, however, it is true that neither the woman nor her guardians can give

[1] Holekamp, Grady & Moore, makers, St Louis, Mo.

consent, then the responsibility rests entirely with the physician. No lawyer, no secretary or chairman of a Lunacy Committee, and no Board of Public Charities can relieve the physician of this responsibility, or prevent him from acting in accordance with the dictates of his conscience in this matter.

And so "the Committee on Lunacy of the Board of Public Charities" of the great State of Pennsylvania "has full authority under existing statutes to prohibit the performance of operations" upon and "to regulate the treatment of the insane." The medical officers of the Pennsylvania Hospitals for the insane must "take their orders" from the committee. These men and women, able, cultured, sympathetic, scientific laborers in the field of psychiatry must perforce, should the Committee see fit to demand it, that their patients committed to their charge not as their own professional experience demands, but as the Lunacy Committee directs! Lovely prospect for the asylum physician! If he or she thinks a patient requires a dose of morphine, he or she may find that the Lunacy Committee disapproves of this medication, because "it is the duty of this committee to regulate the treatment of the insane." That's what the "legal member" says. "It is brutal and inhuman, and not excusable on any reasonable ground" to endeavor to restore an insane woman's reason—unless it is done in accordance with the views of the Lunacy Committee. The gynecologists, those terrible fellows, want to invade the sanctity of the insane hospitals and rip open all the insane women in the State of Pennsylvania in order get an "added forward movement up the ladder of fame." At least, that's what the "legal member" says, and doubtless he knows. Of course, the gynecologists and those medical officers of hospitals who believe with them that mental derangement may be due to extra-cranial disease, cannot possibly be actuated by humane sentiments, or the desire to do more for the unfortunates placed in their care than has heretofore been done. They only want an "added forward movement up the ladder of fame!"

To say that the operation of oöphorectomy, so-called is brutal and inhuman, is to accuse the operator of brutality and inhumanity. In making the statement and inference the "legal member" of the Lunacy Committee utters a vile slander. His medical associates on that committee in giving publication to the statement and inference have endorsed the slander. Of this grave misdemeanor, perpetrated upon honorable men and women, I charge them before the bar of professional opinion. Are they willing to stand trial before that court? GEORGE H. ROHE.

Maryland Hospital for Insane.

Catonsville, Md., February 6, 1893.

Revision of the Code of Ethics.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Dear Sir:—In his letter to THE JOURNAL of Feb. 11, 1893 the writer examined only a few sentences, after reading the whole of the *News* editorial of Jan. 28. He will now give some attention to the remainder and analyze such sentence requiring special consideration. But before beginning this critical examination he will make a few general remarks.

1. There are several prominent features in both of the *News* editorials that require general revision; among them are assertions, opinions and assumptions. The first two can be of no value in argument unless based upon facts which are supported by incontrovertible proofs. The third, assumptions, are not generally regarded as logical deductions. The demands of the dissenters are in keeping with the features to which reference is made above, for they assert, opine and assume that the Code is objectionable without offering any arguments as proofs to establish their claims. They should not forget that the burden of proof rests upon the aggressive side; the office of the defense being to controvert the testimony of the aggressors and to challenge them to furnish substantial facts in proof of their position. The author of the editorials says so much of what he regards as illogical that he may yet take advantage of the art of reasoning and perhaps construct a series of syllogisms to strengthen the position he occupies respecting the revision of the Code and the attitude of the dissenters.

2. The author of the editorials is apparently (inconsistently, however) in dread of that "formidable minority." How can he regard this minority as so ominous when, according to his own statement, it exists "principally" in one State? What is that unit to all the other States? What is that minority to the "general sense of the profession?" If that minority exists "principally" in one State, how insignificantly small it must be in the other States, where there seems to be general harmony! In an assembly of five hundred persons entitled to vote, a minority of two hundred and forty may be considered formidable and excite the apprehension of the small majority, which might in future become a "formidable minority." In many medical associations a majority of one often decides important questions, whilst other questions decides a two-thirds majority, particularly when it is proposed to alter their laws. It does not seem to have occurred to the author of the editorials that "the general sense of the profession" constitutes a "formidable" majority.

3. The writer suggested that it would be gracious for the minority to abide by the "general sense of the profession" and allow the Code to stand as it is. In reply, the author of the editorials said: "But the minority emphatically refuses to act in this gracious manner," and he has no reproof to make them for being ungracious! If the dissenters refuse to be gracious, kind, merciful, condescending and conciliating, but will assume a defiant, dictatorial, and malevolent spirit, how can they expect to be received in the fold of a benevolent confraternity? Repentence, with an avowal to endeavor to be just in future, is apparently their only hope. The author of the editorials seems to be at his wits' end because this "minority emphatically refuses" to be gracious, to be just, and to abide by the law. It is not improbable that the dissenters will be let alone severely, that they will be left in the moral and professional "background," unless they repent and, if they do, then the fatted calf will be killed and the prodigals shall feast and all shall rejoice. The American Association will thrive in spite of dissentions and can wait longer than contentious mortal members, then there will be no more threatening "formidable" minorities to disturb peace and harmony, for the schools will teach the history and philosophy of medicine.

4. The author of the editorials says: "It is not logical to assume that the sentiment which so divided the profession is confined to the State of New York." Is it logical to assume that the profession is divided in sentiment in other States than New York, since, as says the editorial of Jan. 28, "In the State of New York only has there been an expression of opinion on the Code?" Facts, well authenticated, and not bare opinions, or assumptions, are of value in argument. The defenders of the Code do not indulge in assumptions; they rely upon the logic of truth and justice.

5. The author makes an assertion to the effect that the old societies of New York are not represented in the American Medical Association; seemingly without being cognizant of the rules of the American Association. In accordance with these rules, when in one State, there are two State organizations, only one of these societies is entitled to representation. There are now two State organizations in New

York, only one of which adopts the laws of the American Association, and is thereby entitled to representation. This State Association from its large membership, is entitled to send seventy-five delegates yearly, and all of its members may become permanent members of the American Association. Before its defection, the old State Society could not send more than fifty delegates. The number of the author's elect seems to be diminishing, for he has retrenched the "able," leaving the "eminent," and, to keep these in countenance, he has substituted "valuable" for "honest." However, without assumption, it may be declared that eminent and valuable workers are all honest, just as all men are honest until convicted of dishonesty, therefore the adjective was superfluous and its suppression was wise.

6. Now this author indulges in severe reprobation of the advocates of the American Code (although he endorses its spirit), and reprehends what he styles "a blind adhesion to the Code as it stands," and further says that," in view of the attitude of the minority, (it) is short of fanaticism, and is hardly less reprehensible than the extreme action of the advocates of the new code." After this and other terms of reproach, the advocates of the American Code may well exclaim, "Save us from a friend who uses such epithets against us, and who would have us surrender truth, principle, justice and honor, to his great bugbear of a "formidable minority!" The "eminent and valuable" workers also may well exclaim, Save us from the over-zealous friend whose advocacy is so hurtful to our cause! We have made a fatal mistake, but we are too proud to acknowledge our fault! We have rushed into evil ways, it is true; but, although conscience whispers, Ye are sinners, we shall not retrace our steps! Such are likely to be the reflections of the leaders. It is not improbable that the rank and file will say to these leaders: Ye have led us astray, but the light of truth is dawning upon us; we wish to be just; we repent, and must leave yours for the right path; we shall make known our fealty to the National organization; and many have already done so. The majority of the dissenters may tell the author that he was not empowered to say "they emphatically refuse" to be gracious, that he was not asked to plead for them, that they would not have selected him at counsel, still less as barrister, and that even as a friend of the court he would be injurious to the plaintiffs and of no use to the defendants. The author then proceeds to instruct the revision committee how they should frame a "newer code" that may or may not—most likely not—be acceptable to the dissenters who have so long endeavored to disprize an Association which, nevertheless, they wish to join, because from the point of view of this author, the "formidable minority" must rule the majority!

7. The author of the *News* editorials reproachfully says: "To assume that an overwhelming majority of the profession is opposed to any change in the Code is illogical and not in accordance with facts." The defenders of the Code have never assumed to be profound in logic or anything else; they have depended upon the simple logic of truth and justice. If the statement about the overwhelming majority be an assumption, it is the author's own assumption, for he has distinctly said that the "general sense of the profession" is favorable to the Code as it stands. Whether "Iowa's" statement, that nine-tenths of the profession favor the Code as it stands, is an assumption, the writer leaves to the editorial's author to prove. There is, however, in the quoted sentence one point which is clear; the author asserts, boldly and inconsistently, that a statement (which he assumes to be correct) is "not in accordance with facts," but he does not attempt to disprove this statement. What facts has he to show that the majority of the profession in the United States, or the smallest minority outside of New York State, does oppose the Code and is in favor of the adoption of a "newer code?" and what evidence, as a seer, has he that in the event of the adoption of a "newer code," this may not lead to the "newest code," and so on without end? The assertion that a statement is not in accordance with facts is insufficient in any discussion. The aggressor must show what are the real facts, and prove his point, for the whole burden of proof rests upon him, whilst the defender controverts the assertions of this aggressor as well as he can.

8. If what follows be a specimen of the sort of evidence the author is to adduce in his disputations, it may be of interest to know what he generally regards as evidence. He says, in speaking of the New York State canvass: "Does not this showing indicate so considerable a dissatisfaction with the present Code as to call for serious consideration on the part of the central medical organization of the United States? The appointment of a committee of revision of the Code is conclusive evidence that such is the opinion of the American Medical Association." This "showing" does not appear to indicate anything more than the results of the New York State canvass, which are that out of 5,002 physicians, to whom were sent letters of inquiry respecting their views on the Code question, 2,547 favored the National code, 1,040 were for the "new code," 239 were for no code, 34 sent such indefinite replies that they could not be classified, and 1,142 failed to reply. So the real vote was 3,826, and of this number 2,547, or about two to one, were in favor of the National code, which may justly be considered as a "formidable" majority. To regard the appointment of the revision committee as "conclusive evidence" of anything like an expression of opinion, on the merits of the Code, by the Association, plainly indicates that the author needs to explain what his particular views of evidence may be. If he should happen to examine at leisure the subject of evidence he would be likely to withdraw his assertion concerning the "conclusive evidence" in question, and even to have misgivings of evidence furnished by any of the seven deluders; but fortunately he has added to his catalogue an eighth sense, *i.e.*, the "general sense of the profession," which he does not seem to consider as deluding. To emerge from the labyrinthine mazes of the controversy which he has allowed his too zealous self to enter, he may have followed the example of a well-known disputant and provided himself with "a genteel assortment of the best figures of rhetoric," so as to be able to show that a proposition should not be understood the way it is stated, but quite contrariwise; as, for instance, when he writes "conclusive" it should be understood to mean inconclusive. Then he may triumphantly exclaim that the figures of speech are the pillars of disputation! He should have known that the appointment of a committee is often only a concession to a few irritable, contentious members, and is not necessarily an expression of the assembly's opinion on the questions that may be examined by the commmittee, for the assembly does not take action on the subject until after the committee's report. The disaffected make persistent demands for the appointment of a committee, and the assembly, to be rid of tedious discussion and to prevent the waste of precious time, appoints the committee, but note the verbiage of the resolution: "*Resolved*, That the President appoint a committee of five to whom the Code of Ethics of this Association shall be referred for such changes or amendments as they may deem it wise to recommend, if they should decide that any change is required." The writer has failed to detect anything in this verbiage which may be construed as "conclusive evidence" that the Association was of opinion that the Code requires modification. The last clause of the resolution says distinctly, "if they (the committee) should decide

that any change is required." This surely does not indicate that the Association was of opinion that the Code needs to be modified, or that the hyperbolically "formidable minority" had given "conclusive evidence" of the necessity of such modification. How can all this be so regarded by the author after saying that the "general sense of the profession" is favorable to the Code as it stands?! It is well known that the revision resolution was inspired by those who long since disfranchised themselves from the Association, and now insist upon being readmitted on their own terms. Is there any evidence that he who wrote and presented the resolution for the appointment of the revision committee was not, unconsciously perhaps, in the hands of the enemies of the Association?

9. Here is more of the inconsistency of the author who, having before said, substantially, that the public has nothing to do with the Code, now speaks of the provision "which has subjected the profession to criticism by the public on the grounds of intolerance and inhumanity." He reiterates that "the Code is for the profession and not for the public," and further says: "The public does not care for or read the Code; and as a rule, the few who have any knowledge of its provisions ignorantly regard it as intollerant, and in a certain sense inhuman." Whence his information that the public does not care for or read the Code, and in what particular sense is it inhuman? These are among the many examples of gratuitous assumptions by the author of the editorials. That the framers of the Code intended it for the public as well as the profession, is evidenced by the inserted article relating to the "obligations of the public to physicians," and these framers of the Code were far-seeing men whose ability, wisdom, scholarship, and motives have never been questioned. The author offers no testimony to show that "the public does not care for or read the Code." Here is another glaring inconsistency. Yet "the few who have any knowledge of its provisions ignorantly regard it as intolerant and in a certain sense inhuman." How do "the few" obtain this knowledge? A portion of the quoted sentence looks like calling a few members of the public bad names. May not the rest of the public, with propriety, resent the epithet ignorant? The American people has a fair stock of good sense, and is by no means grossly ignorant. The public may have been misinformed and very likely was intentionally misinformed by irregulars who are ever anxious to decoy the regular profession, and take special advantage of the existing dissensions to carry out their purposes. According to the author, the general public has not read the Code; this is not doubted, but may not this public have received, from designing persons, the impression that the Code teaches intolerance and inhumanity? Therefore would it not be proper to publish to the nation the whole Code together with the well known admirable commentaries appended thereto, and to await the decision of those who shall have read it with care, and then to ascertain how many consider it "intolerant and inhuman"! The public is dependent upon physicians for the cure of disease and for special and general sanitation, and physicians are dependent upon the public for their livelihood. This interdependence entitles physicians to know something of the laws governing the public, and entitles the public to know something of the laws governing physicians in their relations with each other and with this public. The Code was framed for the instruction and protection of the public as well as of physicians. It is astounding to hear any thinking being say that the public has nothing to do with the Code. Let the public have better opportunities to be acquainted with the provisions of the Code, and make no assertion that this public cares nothing for them unless a general opinion is expressed to that effect after careful perusal. Publish widely, in the newspapers, the Code and commentaries, and let the public judge for itself.

10. The author of the editorials here makes a most strange disclaimer when he utters the following: "We do not discuss the question of revision of the Code in anything approaching a controversial spirit." The writer is forced to take issue with him also on this topic. The author disclaims a controversial spirit, and yet has turned against much of the matter and manner of the Code, though his opposition is not made by reasoning, by offering arguments to establish his position, and his statements are not generally in conformity with the customs of controversy. The editorial of January 28, manifests a strong spirit of controversy, while in it the letter of controversy is not in accord with custom, as already shown in several of the paragraphs which here give the results of its examination. The two editorials are therefore placed in evidence that their author is imbued with the spirit of controversy, but they give little evidence of the letter of controversy. The editorial in the *Medical News* of September 17, 1892, was the opening of the controversy, for at page 332 he says: "We throw out as tentative suggestions what seem to us the most important points, and invite full and free discussion of the various suggestions, *seriatim*." An author who invites full and free discussion need not expect all criticisms to be favorable to his productions, and should not be seriously grieved if some of the critics point out flaws in his statements and show why they cannot agree with his views. The writer challenged him to offer arguments and proofs in place of baseless assertions, bare opinions, and gratuitous assumptions. If he and those he supports are in the right, then the framers of the Code and the American Association have been wrong for forty-five years. If he cannot coolly and dispasssionately discuss this question, or if he finds that he is in error, let him make a frank, open, and manly avowal that he is wrong, and he will probably rise to a great height in the estimation of the "eminent and valuable" workers as well as of the humble defenders of the American code. To acknowledge a wrong is always noble and never humiliating.

11. If, as says the author of the editorials, "it is not essential that a perusal of the Code should give pleasure as well as instruction," it may not be improper to ask if it is essential that such perusal should give neither pleasure nor instruction? If the Code failed to give pleasure coupled with instruction, it would seldom be read and would be of very little use. But there is no accounting for literary or any other taste. It seems to the writer that an essay composed in good manner and pregnant with useful matter should give pleasurable instruction to the reader, whilst a slovenly and obscurely written document which may contain some good ideas thus badly expressed, and which requires laborious perusal, would be likely to be cast aside, half read, by the majority, even of those who may be anxious to learn. It is scarcely fair to assume that all medical readers lack the refined discernment which seizes the beauties of a poem or of good prose, and distinguishes the perfect from the mediocre, the noble from the sublime, and finds for each its rightful place.

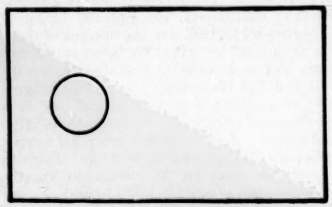
12. The writer once more declares that in this controversy he is actuated by the sole motive of defending what he believes to be a just cause. He will therefore spare no pains in endeavoring to find flaws in the statements of the opposition, he will use all legitimate means to defeat the opposition, but in a courteous manner and spirit, and will not employ unfair methods. If, however, in the heat of argument, he should make any utterance that may, in the least degree, be considered contrary to the customs of literary or scientific controversy, or if he should inadvertently make a misquotation, he humbly apologises in advance, and if ever

his attention is called to any utterance or misquotation he will cheerfully offer a special apology. The writer regrets that his occupations have not permitted a more complete and concise criticism of the two editorials. He has examined only the main features of these remarkable documents, and has left many things unsaid, otherwise too much of THE JOURNAL'S space would have been taken.

A CONSERVATIVE MEMBER.

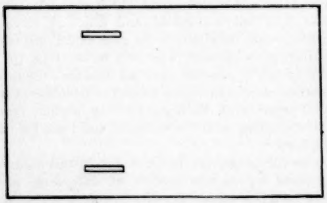
To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

I wish to suggest a method of dressing the cord in midwifery cases, which I think, will be an improvement over the ordinary way, as we know it. Thus, the cord is cleansed, and tied in the usual place, then a thick pad of aseptic lint with a hole in it is put on over it, then a small metallic plate of lead or zinc (par ex.) with a hole in it is put on



FIRST PAD

METALLIC PLATE



LAST PAD

close to the pad. The cord is secured to this plate by a rubber band or ligature around the legs (*aa*). If the rubber band is used, hitch a loop of it over one leg, tighten it around the cord and secure it to the other leg (*a*). Then, bend the legs down to the plate for fixing it. Now, carry the cord down in the long axis of the dressing and cover it well with the other pad, which is perforated by, and held by bending down the legs (*bb*) on the lead plate, complete with the usual binder around the body. This gives a clean and fixed dressing, the metatic plate acting as a support in passive hernia. Truax Greene & Co. informs me that they can be made at a reasonable cost.

Evanston, Feb. 6, 1893. JOHN H. BLACKBURN, M.D.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

Second Annual Meeting, held in New York, October 4, 5 and 6, 1892.

WILLIAM J. MORTON, M.D., PREST.

FIRST DAY OCTOBER 4—AFTERNOON SESSION.

(*Continued from page 160.*)

ELECTRIC CATAPHORESIS; ITS USES IN GENERAL MEDICINE.

By William J. Morton, M.D., of New York City. Professor of Diseases of the Mind and Nervous System and Electro-therapeutics, New York Post-Graduate Medical School and Hospital.

Excluding from this section of our discussion reference to what would naturally fall to other participants and within the lines of introduction, physics, surgery, gynecology and nervous diseases, it would hardly seem at first glance as if much remained to be said in the section allotted to myself. And there may indeed, be danger of overlapping remarks. Yet, even in that case, such is the importance of cataphoresis in electro-therapeutics, and its interesting nature. I am sure the trangressor may hope for lenient judgment on the part of his hearers.

The part of this subject, most important from a medical point of view to elucidate, is the physics of cataphoresis, its nature, the laws which govern it—whether it is a simple mechanical transportation, whether it is incidental to or an actual part of electrolysis, its relations to chemical osmosis, and whether finally, it is not in reality a compound phenomenon consisting both of mechanical transport, and electrolysis, with, under certain conditions, the addition of chemical osmosis.

The existing confusion in this the most fundamental branch of our subject is apparent when we recall that according to Jurgenson fine solid particles suspended in the fluid traversed by the current flow in a direction opposite to its conventional direction while Quincke found that the particles flow in both directions; again methyl blue travels from positive to negative pole, while eosine travels from negative to positive, and an alcoholic solution of bromide of barium also travels from the negative to the positive pole. To the distinguished physicists who are with us to-day we look for light.

It has seemed to me that we may seek for an explanation of cataphoresis in the modern view of electricity which assumes that the electric energy resides in the medium outside of the conductor expending this energy upon conductor or non-conductor alike, the difference between the two being that the conductor dissipates the energy and thus becomes the seat of what is termed a current, while the nonconductor, though subjected to the same influence fails to dissipate it. In the former case the vibrating medium vibrates along the conductor by a succession of lapses or slips while in the latter case it vibrates against the non-conductor which becomes simply charged or electric. The former constitutes a current, the latter a charged body.

At this point, in cataphoresis, comes in the question of the electric resistance of the fluid conductor. If the fluid has little resistance, as in acidulated water, there is little

or no movement, but if the resistance of the fluid is increased, the rate of flow is increased and for a given resistance its flow will be proportional to the current strength. On the other hand, the resistance may be so increased that there is no cataphoresis, as in the case of oils, but there is also little or no current. May we not assume, to explain the transfer of fluids by cataphoresis that the action is mechanical, that the partially conducting molecules which constitute the electric resistance are borne along bodily, to use a rough comparison, like chaff before the wind—become in short, since the mass is fluid, a resistance which may be moved along, while the conducting molecules dissipate the energy they receive to form the current. We might designate this a theory of moveable resistance.

In support of a purely mechanical theory I would cite an experiment from Ganot's physics which is very easily repeated. A glass tube, say 1-16 of an inch in its internal diameter is filled with acidulated water and a globule of mercury nearly equalling the diameter is introduced. The glass tube is corked at each end, a wire is led in through each cork and the apparatus included in a galvanic circuit of from five to twenty cells. Upon allowing the current to flow the globule will promptly and invariably move from the positive to the negative pole even when the tube is so inclined that the mercury must be raised against gravity.

Again, in support of the same view, by making a paste of liquid glass and finely powdered graphite and smearing it over a positive carbon electrode I have caused, with 15 milliampères of current, the graphite to penetrate the hair follicles so deeply that they remain imbedded there for weeks in spite of efforts to remove them.[1]

In this case since the graphite could not have been acted upon electrolytically it must have been forced into the follicles by the force of its flow.

Certainly, this question continuously arises, why do fluids of little resistance not suffer movement? The most likely answer would seem to me that where there is friction in a fluid there is movement, and where there is no friction there is no movement.

In the midst of so much uncertainty from a physical point of view fixed procedures of medical practice cannot in all instances be established.

But individual facts well sustained by experiment stand out from the confusion and lead to corresponding certainties in practical medicine.

It is certain,

a. That in a fluid and semi-fluid conductor like the human tissues there is a movement of fluid from the positive to the negative pole.

b. That extraneous fluids maintained in contact with the skin or mucus membrane and thus constituting continuity with the body fluids are transported from the positive toward the negative pole and that in this manner medicinal substances in solution may be caused to penetrate the skin and enter the tissues and the circulation.

c. And it is theoretically possible and demonstrated with tolerable certainty that medicinal substances in solution in the tissues may be removed from these tissues as well as introduced into them by the direction flow of the current from positive to negative pole.

Thus electric cataphoresis to-day presents itself to general medicine as well as to special, under two divisions, each one distinct from the other, viz.:

1. Cataphoresis or simple fluid transportation in the human body.

2. Cataphoric medication (and demedication).

It is difficult to say at present which of these two will in the end render most service in the treatment of disease.

[1] New York Medical Journal, April 25, 1891.

1. Cataphoresis (irrespective of medication).

This has long been a recognized action of the continuous current. Named in the first instance by DuBois-Reymond, Remak later on included it in the *ensemble* of actions which he termed katalytic. But it is only in late years that it has received any worthy attention—an attention mainly the result of laboratory experiments upon the lower animals and upon dead animal tissue.

Among such experiments, almost unique and especially worthy of mention are those of G. N. Stewart, physiologist, in Owens College Physiological Laboratory. In all animal liquids when separated by a porous septum there was an immense transference of water from the positive to the negative compartment, also a distinct movement of pigments and proteids.

"For example, in an hour and a half, with a current of only five milliampères mean strength, the volume of a 3.6 per cent. hæmoglobin solution had diminished 40 per cent. in the positive compartment" and increased to a corresponding degree in the negative. Again, "In a two hours electrolysis of bile with a current of 65 milliampères, no less than 92 per cent. of the water had disappeared from the anodic compartment, which originally contained 10 c.c. of the liquid."

When 70 grams of rabbit's muscle with no porous septum was electrolyzed for thirty minutes by a current of 350 milliampères, the water in the cathodic half was found to exceed that in the anodic half in the proportion of 48 to 31 and the salts in the proportion of 48 to 23. Both electrolysis and cataphoresis contributed to this result.

In a living rabbit Stewart passed a hollow metallic electrode into the vagina; when this electrode was a cathode fluid was forced through it, while none appeared when it was an anode. In this case it might be queried if the flow was not due to increased secretion due to the stimulating effect of the cathode, but there was little doubt that cataphoresis was the main factor in its production.

These experiments are not cited to show the possibility of cataphoresis, for of this there is no doubt, but to show the very large amount of the transference of fluid which may take place in tissue. The fluid transfer also includes the removal of the substances dissolved in it, mainly salts. The importance of these latter to the maintenance of healthy nutrition is well known. Normally varying from one to two per cent. in muscle, nerve and other tissues, a decided change in the percentage produces a marked effect upon their vitality and their nutrition. The experiments of G. Weiss[2] upon the legs of living frogs show that the excitability of the untreated leg was for a long time twelve times greater than that of the electrolyzed leg, and that there were produced profound microscopical alterations in the structure of the muscle. Porret, in the phenomenon named after him, had already noted the cataphoric microscopical change in the muscle.

The importance of this fluid-conveying power and its concomitant deprivation of tissue of salts, both by cataphoric removal and by electrolysis, is scarcely yet appreciated. Its applications to general medicine are obvious, while it may explain well-known results thus far established empirically

The gynecologists, under the leadership of Apostoli, have used currents of great current strength at the point of small metallic electrodes, and have thus arrived at distinguishing expressions relating to the action at either pole.

The hæmostatic and drying effect of the positive electrode may well be due to the removal of fluids, while the "liquefying" and "hæmorrhagic" effect at the negative pole is equally due to cataphoresis. Granting the softening effect

[2] Technique d'Electro-physiologie, Paris, 1892, p. 125.

of the negative pole upon urethral stricture, is it not largely due to a liquefaction by the flow of fluids to it?

In a minor way it has long been noted that the eschar at the negative pole was soft and liquid while that at the positive pole was dry and hard, also that the negative needle in surgical electrolysis is loose and free in the tissue, while the positive needle, even though of unoxydizable material, was held firmly.

On a larger scale and in general, cataphoric accumulation of fluids at the negative pole is indicated in the resorption of tumors and of exudations. The application of the action to uterine fibroids and to inflammatory exudations is obvious. In the former case the great current density of the continuous current produces a contraction of the uterus and diminution of the vascular supply of the tumor with a loss of its salts. Its nutrition becomes impaired and a reduction in size is accomplished. In the latter the starvation of its salts alone is the most important element in causing absorption and dissipation. The cataphoric action of the current is also indicated in chronic rheumatic affections of joints and in thickening of synovial membranes about the sheaths of tendons.

In short, in determining upon what action of the current to appeal to to accomplish denutrition and absorption, cataphoresis comes saliently to the front.

2. Cataphoric medication and demedication.

The historical growth of the idea that medicine might be introduced through the skin is most interesting. This falls naturally under introductory remarks.

That medicinal substances do penetrate the skin is now beyond doubt. Personally, I have often ascertained the presence of iodide of potash in the urine after applying it to the positive electrode alone or to both electrodes, and have driven fine particles in suspension, like finely pulverized graphite, into the hair follicles, where they have remained firmly imbedded for weeks. Cocaine anæsthesia by electricity is a well established procedure.

To what extent this method of introducing medicine to the human system may become of practical utility in general medicine becomes an important question.

There are obvious reasons why the method cannot compete with the introduction of the same medicine into the stomach. To introduce it by the skin a battery is required; the amounts introduced are comparatively small, though large enough with certain powerful drugs; and it is difficult to measure the dose introduced with accuracy.

On the other hand there are advantages theoretical and practical which may be named, as for instance, when the tissue upon which it is required to have the drug act is superficial and local. This is often the case in diseases of the skin, in ulcerations, lupus and cancer, in superficially situated neoplasms like a syphilitic gumma.

Again, granting a part in the phenomenon of cataphoresis to electrolysis, it may be that remedies acting in their nascent state ought to be of especial efficacy.

To avoid the action of the fluids of the stomach upon medicines is also sometimes to be desired.

Comparatively very little in the way of the introduction of medicines in general medicine by this method has been done.

The medicines have been introduced by two systems; by electrodes of about the usual size modified to maintain the dissolved medicine in contact with the skin, and through the agency of electric baths.

By Electrodes.—The list is long of those who have introduced medicines or attempted to do so by this means. It would include the names of Pivati, Verati, Bianchi, Brigoli, Palma, Winkler, and many others of that time. Of Priestley Mangin, Guardana, Sigaud de la Fond, de Haen, Becquerel, Davy, Fabré-Palaprat, Hassenstein. Of Beer, Clemens, von Bruns, Munk, Adamkiewrtz, Richardson, Wagner; of Erb, Larat, Bardet, and so on through a large biblography to our own times.

To illustrate the present status of the subject in general medicine, and aside from experimental research, but few names can be or need be mentioned.

In April, 1889, Dr. F. Peterson's article on "Electric Cataphoresis as a Therapeutic Measure" awakened an entirely new interest in the subject on this side of the Atlantic.

In this same year, Mr. Newman Lawrence and Dr. A. Harris, both of London, separately and conjointly described the cataphoric method of medication, inventing if I am not mistaken the term "cataphoric medication" to describe it. Their paper was read before the Society of Arts.

In the same year also (November) Dr. Cagney, also of London, treated a variety of diseases by this method. Among other remedies he used Iodide of Potassium in cases of labrinthine deafness, lead palsy, syphilitic gummata, etc. These English publications revived the interest in the subject on the other side of the water.

In later years some excellent and elaborate papers upon the same subject have been published in France though I cannot at this moment lay my hand upon the references. I recall at least the name of M. Danion in this connection.

At the International Congress held in Berlin, in August, 1890, a paper was read from Mr. Edison upon the employment of cataphoresis. After careful experimental work with solutions and porous septa the process was applied to two cases of gout.

The patient immersed his hands in jars of water. The one, the positive pole jar, containing a 5 per cent. solution of lithium chloride; the other, the negative jar, containing a solution of common salt. In the first case 5 ma. of current was used and lithium was detected in the urine.

A second case received 20 ma. On the whole the experiments were conclusive.

The writer published in April, 1891,[3] an account of a new method of introducing medicines into local parts, like rheumatic joints and employed the lithium salts (carbonate chloride and bromide) placed in solution upon compounds suitably applied.

The method was termed anæmic cataphoresis, and on account of its practical relations should be mentioned here. As ordinarily introduced the drug quickly finds its way into the blood stream and its local effects are diminished or lost. In anæmic cataphoresis the blood stream is cut off by an Esmarch bandage or rubber rings and the drug acts directly continuously in *loco dolenti*.

Beginning at that time the treatment of rheumatism and gout by this method, the writer has continued it ever since with great advantage, especially in chronic cases. The solution of lithium salt is applied to large sponges bound upon each side of the joint, generally bloodless by an Esmarch bandage, and owing to the complex nature of cataphoric action the dissolved medicine is applied to both electrodes. The current strength bearable with electrodes four inches square was from 15 to 20 milliampéres, duration of treatment 20 minutes.

In September, 1891, Dr. Imbert de la Touche, of Paris, read an extended paper upon the treatment of gout and rheumatism by cataphoric medication. The remedies in solution were applied by aid of a large sponge or absorbent cotton, and made to constitute a positive pole. Cases were carefully reported and the results most excellent.

(*To be continued.*)

[3] Note on a new method of cataphoresis. N. Y. Jour. April 25, 1891.

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SATURDAY, FEBRUARY 18, 1893.

THE NECESSITY FOR TRAINED AND EDUCATED HEALTH OFFICIALS.

There has probably been no time in the history of this country when trained, competent and efficient health-officers were needed so much as they are now. The average health-officer is appointed without any special training or qualification for the place; his tenure of office is so slight that very few feel warranted in qualifying themselves for such duties and in no other direction is there any special incentive to full preparation for the discharge of the responsibilities that devolve upon the holder of such office. Much has recently been said with regard to the manner in which cholera was managed in England during the last autumn, but nothing was said in regard to the special knowledge required of medical officers of health in that country, before they receive such appointments. No one is eligible to such appointment in Great Britain without special training and his qualification having been established by examination; his position is then assured and he is not subject to removal with change of administration. It ought to be axiomatic that no health-officer, no health-commissioners, no executive officer of a board of health, should anywhere be appointed, until after thorough examination, or training in a subordinate capacity, and until he had evinced special aptitude for and interest in that line of work. A great misfortune in this country is that whenever a change of administration is brought about, it is considered necessary to change officers of health and to appoint a new man without any reference to his special capability. Instances frequently occur, involving great responsibility, where the appointee is wholly incompetent, and is dependent upon the subordinates in his office for information and advice; in short, is compelled to learn the duties incumbent upon him at the expense of the life and treasure of the public. Until a change is made in the mode of selection of these officers, and the tenure by which they hold their appointments is more stable, we cannot expect in this country efficient sanitary administration.

In all civilized countries, except the United States, there are some special qualifications required for this office, and just in proportion as they are exacted, in the same proportion is the community protected from preventable diseases; from unnecessary panics with the suffering incident thereto, and from the economic loss caused thereby. Unfortunately it is generally supposed that all medical men are sanitarians; this is not the case, as their education, training and work have not generally been in that direction. It is unfortunate that in the absence of epidemics or pestilence, too little attention is paid to the protection of the public health, and as a necessary consequence, to the selection of those whose duties require them to guard the public health. Laws should be passed in all the States defining the qualifications necessary for eligibility for appointment of health officers. This is in the direction of a civil service reform much needed.

Bills are now pending in a number of State Legislatures having for their purpose the enactment of efficient laws for the regulation of the practice of medicine by means of State examining boards. Wherever such boards have existed they have been of value not only to the State in affording protection to the people from charlatans and unqualified practitioners, but such boards have exercised a most valuable influence in elevating the educational standard of the medical profession.

We regret that in some instances, notably in the State of Illinois, bills have been introduced in the Legislature, which, if enacted into laws will practically annul or abrogate the efficiency of the present medical practice act.

The Chicago Medical Society and other similar organizations will do well to give this subject their practical attention.

PAPERS.—Those members of the American Medical Association who expect to read papers before the Sections should, as soon as possible, send the subject title to the Chairman or Secretary of the Section. See names and addresses on the title page of THE JOURNAL.

CRIPPLED CHILDREN.

A mass meeting was recently held in the Central Music Hall of this city for the avowed purpose of establishing a Home for crippled children. Many prominent clergymen and sagacious business men lent their presence or their names to aid the enterprise quite thoughtless, it would seem that it would be quite as reasonable to found a home for persons suffering from typhoid fever or disabled by fractured bones. The conclusion which these thoughts leads to is obvious. The prominent clergymen, the sagacious men of business, the charitable ladies, and the medical men who appear at the end of the procession are wholly unaware that it is possible to *cure* crippled children, rendering them self-supporting and useful members of society; that it is a hospital and not a home to which such patients should be sent, and that it is the trained surgeon and not the gentle physician upon whom the responsibility of their care and cure would fall.

In this number of THE JOURNAL, and the succeeding, we publish a paper upon hip disease, to which it would be well for those interested in a home for crippled children to read with some attention.

It is written by two gentlemen who have had unlimited opportunities for observation. There it will be learned that only about eight per cent. of all cases die; and of those that live all are curable without other deformity than a slight shortening of the limb or stiffness at the joint; that very many have normal length of the limb and normal motion at the joint; and that all have sound, strong and useful limbs.

Nearly as good results may be expected in POTT'S disease. The deformity of POTTS' disease may be prevented if diagnosis is made sufficiently early, *i.e.*, before the deformity has occurred; that in other cases, where the deformity has occurred, it can be reduced if treatment be commenced before consolidation has taken place and carried persistently forward; and that in the old and most inveterate cases all increase of deformity can be prevented, the duration of the disease shortened, and an improved attitude gained.

It is, then not a home with free food and clothing that the crippled children demand; it is a hospital for the correction of their deformities and the care of their diseases.

THE CAUSES AND TREATMENT OF PREMATURE BALDNESS.

Under the above heading the *Medical News* discusses an article from the pen of SEEGER (*Wiener Klinik*, December, 1892). The fact that baldness is more common in men than in women at once suggests to the writer that the difference is to be found in the care and covering of the hair in the two sexes. The same observations were made more than twenty-five years ago, and yet the number of bald-headed dermatologists to be seen in medical gatherings is steadily increasing. That baldness is much greater among men is an unquestioned proposition, and that it should be at once referred to differences in dress and manner of wearing the hair is most natural, *post hoc ergo propter hoc*. We are remined in this connection of a celebrated gynecologist who observed in one of his clinical lectures that women with straight pupic hair were often sterile, when one of his students naively inquired if curling the pubic hair was not an indicated remedy in sterility?

One writer further finds that men wear heavy, rigid hats, that constrict the forehead, and discourage perspiration. The moisture and heat stimulate an abundant but unhealthy growth of hair. Among other causes it is noted that men wear their hair short. We are told that short hairs grow faster but do not possess so much vitality as long hairs, nor do they afford so much protection to the scalp. It is apparent that writers on this subject have fallen into the habit of mistaking mere association for cause and effect. Coincident phenomena are not necessarily causal in their connection. There is nothing in the above argument that would not apply to paretic dementia, it too is a disease more common in men than women, and the same want of ventilation and constricting hat bands, are coincident with the development of this disorder. Again, if these causes are so prolific in producing baldness, we must assume that the nutrition of the hair of the head is unlike that on any other portions of the body. Falling of the pudendal hairs is a very rare phenomenon, and yet they are peculiarly exposed to heat, moisture, and the accumulation of decomposing secretions. Again, the success of one of the older hernia operations was jeopardized by the growth of hair, and the accumulation of secretions in the invaginated portions of skin. Hairs grow abundantly in the nostrils, and persist there notwithstanding the heat and moisture. If frequent cutting of the hair is a cause of baldness, why is it that the beard survives the process of shaving, and that men who shave regularly have quite as heavy beards as those who allow them to grow?

The foregoing considerations are quite sufficient to show that we have not stated all, or indeed most, of the causes of baldness, especially when we consider that it is peculiarly a racial disease, some divisions of the human family being exempt from the disorder, notwithstanding the most unsanitary head covering. The fact is that premature baldness seems to affect males of the highest developed Aryan races, just as hysteria affects its females. Both are conditions due to heredity and racial peculiarities. Per-

haps we are losing our hair for the same reason that we are said to be losing our teeth; because they are no longer needed. The condition marks then but a step in the upward adjustment of the human form in advancing civilization. The early loss of the hair and teeth may yet be recognized as a sign of culture and refinement; and as was remarked some years ago in this JOURNAL, the escutcheon of the future will have for a ground a hairless scalp with a decayed tooth rampant.

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

The President, DR. L. S. PILCHER, in his address delivered at the annual meeting in Albany, February 7, referred to the American Medical Association as follows:

The American Medical Association and State Representation.—I have the pleasure of presenting to this Society at this time a communication from Dr. William B. Atkinson, Permanent Secretary of the American Medical Association, transmitting a resolution adopted by that Association at its session held in Detroit, June, 1892, appointing a committee of five, instructed to meet a like committee from the State Medical Society of New York, and the State Medical Association of New York, for the purpose of adjusting all questions of eligibility of members of the State Medical Society of New York to membership in that Association, and notifying this Society that the committee had been appointed, consisting of Drs. N. S. Davis, of Illinois; John H. Rauch, of Illinois; William T. Briggs, of Tennessee; Dudley S. Reynolds, of Kentucky; and Willis P. King, of Missouri.

The evident intention of this resolution was to request that this Society appoint a similar committee to confer with the committee named, although the resolution as transmitted does not say so. It is difficult to see what purpose such a conference as is proposed could serve. The American Medical Association is very properly its own judge of what shall be the qualifications required of its members. It is a voluntary Association, responsible to no one, and may change its standard for admission at its will. At its session at St. Paul in June, 1882, it voted that the Medical Society of the State of New York was not entitled to representation in it, because the Code of Ethics adopted by that Society essentially differed from, and was in conflict with, the Code of Ethics of the American Medical Association. The status of affairs to-day differs in no respect from what prevailed in 1882, save that a year or two later the American Medical Association adopted an explanatory declaration which practically interpreted its own Code to mean the same as the Code already adopted by the Medical Society of the State of New York. It did not, however, rescind the vote of disfellowship adopted in 1862, but, on the contrary, at the recent meeting in Detroit, renewed it and extended it, to embrace not only this Society as an organization, but also all persons who affiliated with it. At this same meeting, also, it appointed a committee to report upon the revision of its own Code of Ethics. There is therefore no certainty as to what the future Code of Ethics of the American Medical Association will be. It would be highly improper for the Medical Society of the State of New York to assume in any way to dictate to, or even suggest to, any organization not subordinate to it, what ethical standard, if any, such an organization should adopt. It must content itself with regulating its own standards, as it now does, suggesting in turn that it is equally indelicate for organizations which have no supervising relation to it to extend advice as to its internal affairs. Practically the relations of the Medical Society of the State of New York to the American Medical Association are the same as those which it sustains to the British Medical Association, the Canadian and Ontario Medical Associations, and to the Medical Societies of the various adjacent States to which it is in the habit of sending delegates annually, viz.: the relations of courtesy and comity. All these medical organizations named continue to receive with due honor and respect the delegates appointed by this Society, and doubtless whenever the American Medical Association shall signify its desire that this Society shall again send delegates to its meetings, such delegates will be sent. The Medical Society of the State of New York, however, must meanwhile be content to do its own work in its own way, awaiting the pleasure of the Association in question. Nevertheless, since a failure by this Society to appoint such a committee as is contemplated in the communication from the American Medical Association, would doubtless be construed by many, who are still ignorant of the real relations which exist between the two organizations, as displaying a factious and quarrelsome spirit, and as a matter of simple professional comity, I would advise that a committee of five be appointed by this Society to meet the committee of the American Medical Association as requested.

The Present Code of Ethics.—In the course of the discussions which have been provoked by the action of the American Medical Association just alluded to, it has come to the knowledge of your President that many of the physicians of this State are convinced that in view of the present state of general enlightment prevailing throughout the State of New York, and the safeguards which by legal enactments are thrown about the entrance into the medical profession, it would comport more with the dignity of the medical profession, and would enhance the respect in which it is held by the general public if all specific rules of ethical conduct were elided from the by-laws of the State Medical Society, and if the regulation of such matters were hereafter left to the judgment of individual practitioners influenced by the well-known consensus of professional opinion and local custom in the places where the work of each is being carried on. Among a large number of representative physicians from all portions of the State with whom I have conferred on this point, I have found a singular unanimity of feeling on this subject. The only hesitancy which any have expressed has been as to whether it would be wise, since practically this is already the present status of the profession in this State, to make any movement looking to a formal revision of a Code from our by-laws, lest it should revive acrimonous discussion, and reawaken strife that would be detrimental to the higher interests of the profession in this State. By far the greater weight of the opinions which I have

been able to elicit has, however, been that no such result would follow; but that, on the contrary, such action would tend still more to heal old differences and bring together all the elements of medical profession in this State. Such is also my own mature opinion, and further, it has seemed to me that at present, where there is a general revival of interest in the matter of professional ethics, as is evidenced by the discussions which are now going on in the medical journals of the country, and when this question of Code is again unavoidably brought to the attention of this Society, that it is a specially favorable moment for taking this final step. At the present time the only allusion in the by-laws of this Society to a system of Medical Ethics is the very brief § 8 of Chapter VI., which merely says:

"The system of medical ethics adopted by this Society, February 7, 1882, shall be considered authoritative to govern the medical profession in the State of New York."

I would recommend that this section be dropped *in toto*. The effect of such action would be to leave this State Society without any formulated Code of Ethics, and to relegate the Code of 1862, together with that of 1847 and 1823, to the domain of history, though ever remaining of interest and value to the student of the development of ethical standards in the medical profession of this State.

Report of Committee on the President's Address.—DR. VANDER VEER read the report. It recommended the following:

That the Society reserves to itself the right to punish its members for any unprofessional conduct.

The determination of what shall be considered unprofessional conduct shall rest with the Society. If at any time charges are preferred against a member of the Society, these charges are referred to a committee which already exists for a similar purpose. This rule shall take the place of paragraph eight of chapter six of the by-laws, as well as the rules adopted by this Society in February, 1882.

Resolved, That the Society deems it unwise, at this time, to appoint any committee of conference with the American Medical Association upon the subject of medical ethics, as requested by that distinguished body; but the Society ventures to express the hope that the American Medical Association, at no distant day, will take such actions as will remove the merely technical obstacle to the most cordial coöperation between the two societies.

The *New York Medical Journal* refers to this action as follows:

At the meeting of the Medical Society of the State of New York held this week the general endorsement of the recommendations contained in the president's inaugural address was followed by specific action by which the society's Code of Ethics was extinguished. This, of course, freed the Society from any obligation to delegate a committee of conference to meet the American Medical Association's special committee appointed to consider ways and means of reëstablishing relations between the two organizations. The situation seems, therefore, to be somewhat improved; the State Society has no Code of Ethics, and consequently is less at variance with the American Medical Association than when it had a Code that positively clashed with the Association's code. It remains to be seen, however, whether other relations between the two bodies than those of "comity" will again come into existence.

In this action of the New York State Medical Society there seems to be a rolling back and away of the clouds and mists that have obscured the relations of that organization with the American Medical Association.

We look hopefully to the committee appointed by the American Medical Association at its last meeting, to report for the approval of and adoption by that organization of a code of ethics, constitution and by-laws, that will be acceptable and provide an organic law that will make possible a unification and membership in one body of every practitioner of rational medicine in this country.

AN ARMY MEDICAL BOARD will be in session in New York City, N. Y., during April, 1893, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before March 15, 1893, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between 21 and 28 years of age, and a graduate from a Regular Medical College, as evidence of which, his Diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon General U. S. Army, Washington, D. C.

C. SUTHERLAND,
Surgeon General U. S. Army.

BOOK REVIEWS.

INTERNATIONAL CLINICS: A QUARTERLY OF CLINICAL LECTURES ON MEDICINE, NEUROLOGY, PEDIATRICS, SURGERY, GENITO-URINARY SURGERY, GYNECOLOGY, OPTHALMOLOGY, LARYNGOLOGY, OTOLOGY, AND DERMATOLOGY. By Professors and Lecturerers in the leading Medical Colleges of the United States, Great Britain, and Canada: Edited by JOHN M. KEATING, R. D., Colorado Springs, Col., Fellow of the College of Physicians, Philadelphia, etc., JUDSON DALAND, M. D., Philadelphia, Instructor in Clinical Medicine, and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, etc., J. MITCHEL BRUN, M. D., F. R. C. P., London, England, Physician and Lecturer on Therapeutics at the Charing Cross Hospital, D. W. FINLAY, M. D., F. R. C. P., Aberdeen, Scotland, Professor of Practice of Medicine in the University of Aberdeen, etc. Vol. III. Second Series, 1892. Philadelphia. J. B. Lippincott & Co.

There are 53 contributors to this volume on 77 subjects, filling 393 pages. The 24 plates are mostly well made, and there are 40 figures. The sections are apportioned as follows: medicine, 118 pages, surgery, 66, neurolgy, 60, gynecology and obstetrics, 58. ophthalmology and otology, each 19, pediatrics, 17, dermatology 15, laryngology and rhinology, 9, genito-urinary surgery 7.

The initiatory lecture is by Dr. Wm. Pepper, on conges-

tion of the kidneys, etc. He presented one case that illustrated the beneficial effects of injections of morphine in small doses to quiet the nervous system, secure rest, and increase the nerve power, which in turn acts favorably on the kidneys and induces a more active secretion. He does not ignore the fact that in organic disease of the kidneys, with greatly reduced secretion of urine, opium is a dangerous drug. Another case showed remarkable improvement following the exhibition of sulphate of sparteine.

Peritonitis and its treatment, by Dr. A. W. Mayo Robson, of England, is the subject of a lecture which places him on the same plane with many American surgeons in the treatment of abdominal diseases. On page 38 he says: If relief does not occur from general treatment, advise abdominal section, when you will probably discover the cause, which may be remediable."

Dr. N. S. Davis, Jr., gives an excellent description of uræmia and its management. He believes that pilocarpine is contraindicated when the heart's action is weak, and he makes incisions instead of needle punctures about the ankles for anasarca. He recommends croton oil in minim doses; and morphine as well as chloroform and ether for the convulsions. The urine was much augmented by lactose.

Dr. Robert F. Wier reports a successful case of bone grafting. He operated on a tibia shortened by necrosis, fractured the fibula, and wired together the two corresponding ends of the bones above and below the seat of fracture. Union occurred and resulted in a useful, although shortened, limb.

Dr. Flemming Carrow describes his technique for cataract extraction. His patient was 90 years old. He was confined to bed 18 or 20 hours and then allowed to be in a moderately lighted room. The bandages were changed once in 24 hours, and the eye was opened on the fifth day.

Dr. David Webster has abandoned the actual cautery in large corneal ulcers and has returned to the old operation of paracentesis.

Dr. Thos. R. Pooley believes that cocaine used repeatedly endangers the integrity of the cornea.

Dr. J. Orme Green has rendered good service by directing attention to the frequent occurrence of inflammation of the middle ear in the acute infectious diseases. This common, but over-looked and neglected complication will be more readily recognized and appreciated if his lecture is widely read.

A striking example of the ungraceful and detrimental situations into which men fall when they attempt to teach outside of their customary lines of study, may be found on page 384. Dr. Beverly Robinson is lecturing on otology. In treating of otorrhœa he warns his hearers against doing anything to stop a purulent discharge further than to syringe the ear and to mop it out with cotton on a probe. He says: "If the discharge be very abundant, do not try to stop it too soon." As if one should say: "If your house is on fire, do not try to put it out too soon." If the discharge becomes fetid he allows some mild lotion, like a two grain solution of zinc sulphate. He thinks the discharge will be likely to diminish after a week or two, with little or no treatment. He mentions one class of cases in which he deems it important to stop the discharge, namely, tubercular. He objects to the use of such fine (ideal) powder as boric acid, but concludes that "scraping out the ear" might do good, and before he gets through with that ear he coolly knocks the most cherished props from under the favorite rules of practice of our most successful and accomplished otologists.

This is another illustration of the fact that one man cannot excel in all the branches of medicine, however clever he may be.

With the very large number of contributors to this work the subscriber may feel certain of acquiring in the series a veritable thesaurus, upon which he can draw for help in his difficult cases, with confidence. Many of the authors are well recognized authorities on both sides of the globe. A few are not known by their writings, but this opportunity may serve to induce brilliant, but hitherto hidden, lights to shine, and to illuminate many of the dark places that come in every practitioner's experience. It can be fairly said of these collections that their faults are few, and they are obscured by the great array of scientific facts that are marshaled in a masterly manner.

DISEASES OF THE RECTUM. By JOSEPH M. MATTHEWS, M.D., Professor of the Principles and Practice of Surgery and Diseases of the Rectum in the Kentucky School of Medicine. New York. Dr. Appleton & Co. (Illustrated by six chromo-lithographs.)

It is with pleasure that we announce the appearance of this classical work. As was to be expected from the pioneer in rectal surgery in America, Dr. Matthews has given us the best book extant on his special branch of surgery. The author has certainly shown that his pen is as gifted as his tongue. The preëminent qualifications of the work under consideration is its practicability and originality of method.

Dr. Matthews does not appear to have much faith in the efficacy and safety of the treatment of hemorrhoids by carbolic acid. It is a question in the mind of the writer, whether it is not the abuse, rather than the use of this method that is open to criticism. The operating surgeon is likely to despise all but operative methods. There are several specialists who operate only exceptionally, yet are doing most excellent work by local applications of astringent antiseptics and anodynes in cases that most surgeons would operate upon without delay. That itinerant quacks may misuse valuable methods is true, but this does not prove that all of their methods would be useless or dangerous in proper hands.

Taken all in all Matthews' work is one which no surgeon can afford to be without, and a large circulation is to be expected.

HAND-BOOK OF EMERGENCIES AND COMMON AILMENTS. Explaining the latest approved Treatment of Injuries, sudden and painful Attacks, Poisoning, and many common Diseases. By E. F. BRADFORD, A.B., M.D., (Harvard), Member of the American Medical Association, etc. Assisted by LOUIS LEWIS, M.D., Member of the Royal College of Surgeons, Eng.; one of the Editors of the *Medical Times and Register*, Philadelphia. Together with other Writers on special Subjects. Sold by Subscription only. Illustrated. Boston: B. B. Russell.

Here is a book that physicians can conscientiously advise their patients to read. It is full of common sense, and scientific facts made comprehensible to the reader of average intelligence. The uses of domestic remedies and of many new ones are taught. Proper precautions are given concerning the employment of these, and of illuminating oils, gas, etc. There are directions for resuscitating persons who are apparently drowned, asphyxiated, poisoned, etc. Tables of poisons and their antidotes, and the proper treatment, are given a conspicuous place. It may be thought that the people should not be taught to administer such remedies as laudanum and chloroform, but if they will keep them in the house and use them in the absence of medical advice, it is no doubt best that they should have such a guide as this book provides. If they do not deviate from the directions laid down, no harm will come.

Fortunately there is little to criticise. On page 87, in the article on insect bites, it is advised to bathe the face, neck, hair and all exposed parts "with a weak solution (50 per

cent.) of carbolic acid" for mosquito bites. This is not a weak solution. It is strong enough to corrode tissues. Probably the author meant a 5 grain, instead of a 25 grain, solution.

The aim of the book is, not to make every person his own physician, but to teach everyone how to take care of himself when a physicsan is not really needed, and what to do while awaiting a physician's arrival, when it becomes necessary to summon one. Whenever a doubt exists as to the nature or cause of suffering, the reader is advised to consult a doctor. A good idea of the general tenor of the work is given on page 221. After giving a description of strangulated hernia, the paragraph on treatment begins thus: "What should be done? Send for a surgeon at once." Then follows a sensible course to be pursued until the surgeon arrives.

This little book will render important assistance to physicians, directly by reference to its pages, and indirectly by the more intelligent actions of patients and their friends. It contains a great deal of practical information not to be found in medical text-books. There ought to be at least one member of every family who should become familiar with its contents—the mother.

TWENTY-THIRD ANNUAL REPORT OE THE STATE BOARD OF HEALTH OF MASSACHUSETTS. Boston: 1892.

This is one of the most valuable contributions to the science of public hygiene. The examination of water and the study of typhoid are among the most valuable contributions to this subject made during the present year.

This book contains two valuable biological papers, one on the differentiation of the typhoid from other bacilli, by Geo. W. Fuller, the other on uroglena, by Grey N. Calkins.

MISCELLANY.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.—At the second annual meeting of the American Electro-Therapeutic Association, the following officers were elected for the ensuing year:

President, Dr. Augustin H. Goelet, 531 West 57th Street, N. Y.; First Vice-President, Dr. Wm. F. Hutchinson, Providence, R. I.; Second Vice-President, Dr. W. J. Herdman, Ann Arbor, Mich.; Secretary, Dr. Margaret A. Cleaves, 68 Madison Avenue, New York; Treasurer, R. J. Nunn, 119 York Street, Savannah, Ga.

The third annual meeting will be held in Chicago on Sept. 12, 13 and 14, 1893. A cordial invitation is extended to all members of the profession interested in electro-therapeutics. Arrangements for special rates on railways and at hotels are in progress.

The Committee of Arangements will be obliged if those who intend being present at the meeting will send their names, the class and amount of accommodation required, titles of papers to be presented, applications for membership, etc., at as early a date as possible. Accommodation should be secured early on account of the crowded condition of the hotels, because of the World's Fair. All communications should be addressed to the Secretary.

The Committee will be glad to furnish any information in regard to the meeting upon application.

S. C. STANTON, *Secretary.*
FRANKLIN H. MARTIN, *Chairman.*

THE Section on Laryngology and Rhinology of the Pan-American Medical Congress is now thoroughly organized with Secretaries in all the countries of South America as in the United States and Canada.

The President, Dr. E. Fletcher Ingalls, of Chicago, is making a thorough canvass to secure a large number of good papers for the Section, and aided as he will be by the able Secretaries, Drs. Murray and y Alonzo, and the corps of honorary Presidents he feels assured of the success of this department of the Congress. The honorary Presidents are: Dr. Harrison Allen, Philadelphia; Dr. Frank H. Bosworth, New York; Dr. S. Solis Cohen, Philadelphia; Dr. D. Bryson Delavan, New York; Dr. J. F. Dixon, Portland, Oregon; Dr. Stephen Dodge, Halifax, Nova Scotia; Dr. W. C. Glasgow, St. Louis; Dr. Frederick J. Knight, Boston; Dr. Geo. M. Lefferts, New York; Dr. Alvaro Ledan, Villa Clara, Cuba; Dr. John N. Mackenzie, Baltimore; Dr. David Matto, Lima, Peru; Dr. P. Emelio Petit, Santiago, Chili; Dr. John O. Roe, Rochester, N. Y.; Dr. Federico Semeleder, City of Mexico, Mexico; Dr. Chas. E. Sajous, Paris, France.

The Secretaries for foreign countries are:

Dr. Ovejero, [Piedad 22] Buenos Ayres, Argentine Republic; Dr. Guedes De Mello, Rio de Janeiro, U. S. of Brazil; Dr. G. W. Major, Montreal, Canada. Dr. Felix Campuzano, [Virtudes 33], Havana, Cuba; Dr. Luis Fonnegra, [Calle 10, Número 263], Bogota, Republic of Columbia; Dr. Fabricio Uribe, Guatemala City, Guatemala; Dr. Henri Goulden McGrew, Honolulu, Hawaii; Dr. Angel Gavino, [Cocheros 15], City of Mexico, Mexico; Dr. J. Midence, Leon, Nicaragua; Dr. Eugenios Cassanello, [San José 119], Montevideo, Uruguay; Dr. Napoleón F. Cordero, Merida, Venezuela.

All physicians interested in this Section are requested to correspond with the secretaries for the United States. Dr. J. Maron y Alonso, (Spanish speaking,) Las Vegas, N. M.; Dr. T. Morris Murray, (English speaking,) Washington, D. C.

RAILWAY SURGEONS OF OHIO.—The Railway Surgeons of Ohio are called to meet in the amphitheater of the Ohio Medical University at Columbus, Ohio, on March 17, at 9 o'clock A.M., standard time, for the purpose of organizing an Ohio State Association of Railway Surgeons. It is hoped that all interested will make an effort to be present and take part. Those who expect to be present will please drop a line to the Secretary at Sandusky, that an estimate may be made and proper entertainment provided.

CHARLES H. MERZ, *Secretary.* S. S. THORNE, *President.*

THERE are thirty-three ophthalmologists located in Denver, and other specialists in proportionate numbers. Most of them attracted to that city by the salubrity of climate and their own physical ailments. Under such conditions there is not likely to be much of a rush of business for every one.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 4, 1893, to February 10, 1893.

Capt. Paul Shillock, Asst. Surgeon U. S. A., promoted as such, to date from January 31, 1893, in accordance with the Act of June 23, 1874.

Capt. Charles B. Ewing, Asst. Surgeon U. S. A., the order assigning him to duty as post surgeon, Ft. McHenry, Md., is suspended until June 1, 1893, when he will comply with the order. By direction of the Secretary of War.

Capt. Junius L. Powell, Asst. Snrgeon U. S. A., leave of absence granted is hereby extended one month.

OFFICIAL LIST OF CHANGES of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the four weeks ended February 4, 1893.

Surgeon F. W. Mead, to proceed to New London and New Haven, Conn., as Inspector, February 4, 1883.

Surgeon H. R. Carter, granted leave of absence for thirty days. February 3, 1893.

P. A. Surgeon J. B. Stoner, to assume command of Service at Portland, Ore. January 17, 1893.

Asst. Surgeon G. B. Young, when relieved, to proceed to Pittsburgh, Pa., for duty. January 17, 1893.

Asst. Surgeon L. E. Cofer, placed on waiting orders, January 23, 1893.

Asst. Surgeon J. M. Eager, to proceed to Cape Charles Quarantine for temporary duty, February 3, 1893.

Asst. Surgeon W. J. S. Stewart, to proceed to Norfolk, Va., for temporary duty, February 1, 1893.

DEATH.

P. A. Surgeon Spencer C. Devan, died February 1, 1893, at Philadelphia, Pa.